



FROEHLING & ROBERTSON, INC.

Engineering Stability Since 1881

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July 27, 2018

City of Richmond Department of Economic and Community Development
1500 East Main Street, Suite 400
Richmond, Virginia

Reference: Limited Phase II ESA
The Railroad Club
2908 P Street
Richmond, Virginia
F&R Project No.: 54V-0288

At your request, Froehling & Robertson, Incorporated (F&R) has completed a Limited Phase II Environmental Site Assessment (ESA) at the above referenced property, herein referred to as the Site. The Site consists of an approximate 0.364-acre, square-shaped parcel developed with a 7,956 square-foot (SF) structure. The southwestern portion of the building, addressed as 2908 P Street, is one-story and approximately 1,872 square feet in size; the central portion of the building, addressed as 1001 - 1005 North 29th Street is two-stories and approximately 2,535 square feet in size; and the northeastern portion of the building, addressed as 1007 North 29th Street is one-story and approximately 1,014 square feet in size. The building was constructed in approximately 1912 and is currently unoccupied. The Site has reportedly been vacant for at least ten years. The Site is situated within an urban area of commercial and residential land use in Richmond, Virginia.

BACKGROUND

F&R performed a Phase I ESA of the Site dated February 15, 2018. Based upon F&R's review of historical sources and interviews, the Site appears to have been developed with the current 1001-1007 North 29th Street building structure since approximately 1912. The building was utilized as a waiting room, offices, and freight storage for the Richmond Fairfield Railyard Company (1925) and Sanston Railyard Company (1930), and as a restaurant, dance hall, and various stores from at least 1950 through approximately 2000. The current 2098 P Street structure was constructed in approximately 1912, with an addition to the northern side of the building added between 1925 and 1950. This building was utilized as a store (1925) and a drycleaner (1950 through at least 1979). Prior to 1912, the Site was developed with a commercial building located on the northwestern portion of the Site along North 29th Street. According to the Sanborn Maps, this building is depicted as offices, waiting rooms, a machine shop, and a forge, as well as various barns associated with the Virginia Passenger and Power



Company in 1905 and as offices, waiting rooms, a machine shop, and a forge, as well as various car sheds, a paint shop, and a blacksmith shop associated with the Richmond Railway and Electric Company in 1895.

This assessment has revealed evidence of RECs, including the following:

- The Site was reportedly utilized as a forge, paint shop, and machine shop (at least 1895-1905) and as a dry cleaner from at least 1950 through at least 1979. During these time periods, regulation regarding the disposal of industrial waste, petroleum-based and solvent-based products was very limited. Historically, a forge typically used bituminous coal, industrial coke or charcoal as the fuel to heat metal. Dry cleaning was reportedly accomplished using chlorinated and/or petroleum solvents. As a result, the historical use of the Site as a forge from at least 1895 through at least 1905 and as a dry cleaner from 1950 to at least 1979 is considered a REC. Based upon the documented historical use of the Site F&R's recommended soil and/or groundwater sampling order to determine if past uses have negatively impacted the Site.

Non-scope environmental considerations were identified on the Site:

- Based upon the date of construction of the buildings (1912), asbestos containing materials may be present on-site. Obvious evidence of damaged, friable asbestos was observed and suspect asbestos containing materials were also observed. However, an asbestos survey is required for buildings constructed prior to 1980 in accordance with 29 CFR 1926.1101. An asbestos survey is also required, regardless of the construction date prior to renovation/demolition of the structure.
- F&R performed a limited visual evaluation of the interior areas of the Site. Obvious evidence of water infiltration, visual mold and/or olfactory indications of mold was observed during the site reconnaissance due to the collapsed roof located in the northeast portion of the building structure.

The scope of services for the Limited Phase II ESA includes ground penetrating radar services, limited soil and groundwater sampling to determine if the historical usage has impacted the environmental integrity of the Site, and an asbestos and lead based paint survey. The results of the asbestos and lead based paint survey are presented in a separate report.

GROUND PENETRATING RADAR

F&R mobilized to the Site on June 11, 2018, to conduct Ground Penetrating Radar (GPR) activities to attempt to clear the proposed boring locations prior to drilling. A Geophysical Survey Systems Inc. (GSSI) SIR-3000 Radar unit was used. The survey results and data were interpreted in real time. Scans were performed in the vicinity of the proposed boring locations



two (2) feet apart using the SIR-3000 with a 400MHz antenna to locate utilities beneath the surface within the predesignated area. This process consisted of running scans in a grid pattern to check for items in all directions. When scanning a signal is sent into the subsurface and reflects back in a hyperbola showing the top of utilities. The 400MHz was able to read to a depth of five to six feet below ground surface (bgs). Seven boring locations were cleared at the Site to allow for the collection of soil and groundwater samples.

SOIL SAMPLING

In an effort to determine if contamination is present in the soils and groundwater beneath the Site, F&R advanced seven borings for sample collection using direct push technology. The borings were located throughout the exterior of the Site. A GeoProbe® was used to perform the borings. It is a truck-mounted tool that pushes sample collection cores into the sub-surface using hydraulics and static pressure. The GeoProbe® creates little disturbance, leaving only a 2-inch diameter hole, and generates little to no soil cuttings. Recovered soil samples were visually evaluated for indications of contamination and screened in the field with a photoionization detector (PID) for the presence of volatile organic compounds (VOCs).

SOIL SAMPLING AND RESULTS

F&R mobilized to the Site on June 11, 2018, to conduct sampling activities. Seven soil borings were advanced using direct push technology. Boring locations were selected based on Site observations and field conditions such as utilities and subsurface features. The borings were identified as SB-01 through SB-07. Borings SB-01 and SB-02 were located in the grassy fenced area east of the building, borings SB-03 and SB-04 were located along the northern property boundary, and SB-05 through SB-07 were located in the asphalt parking area west of the building.

The borings were advanced to a maximum depth of 35 feet bgs. Soils consisted of yellowish orange and grey clay turning to sand with depth. Groundwater was encountered in the borings at depths ranging from 15 to 24 feet bgs and sampled in three locations. Soil was recovered from the borings every five feet and screened for VOCs using a PID. The PID readings are presented in the table below.

Table 1: Soil Sample PID Results

Sample ID	0-5 feet	5-10 feet	10-15 feet	15-20 feet	20-25 feet	25-30 feet	30-35 feet
SB-01	0.2	0.0	0.0	0.4	0.7	0.8	NS
SB-02	0.2	0.1	0.1	0.1	0.3	NS	NS
SB-03	0.1	0.2	0.7	0.1	NS	NS	NS



SB-04	0.2	NS	NS	NS	NS	NS	NS
SB-05	0.4	0.4	0.0	0.1	0.2	0.1	NS
SB-06	0.9	0.2	0.3	0.1	0.2	0.1	0.1
SB-07	0.5	0.6	0.3	0.3	0.2	0.7	NS

One soil sample was collected from each boring and submitted for sample analysis at a laboratory. The soil samples were collected, placed in appropriate pre-labeled sample containers, and transported to Con-Test Analytical Laboratory (Con-Test) in East Longmeadow, Massachusetts under chain of custody protocol for analysis. The samples were analyzed for total petroleum hydrocarbons (TPH) diesel range organics (DRO), TPH gasoline range organics (GRO), polycyclic aromatic hydrocarbons (PAHs) and VOCs. Please refer to the Sample Location Map for the boring locations. Table 2 presents the soil sample analysis results:

Table 2: Soil Sample Results

Parameter	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-07	DEQ Screening Limit
Petroleum Constituents (mg/kg)								
TPH-DRO	ND	ND	ND	130	ND	ND	ND	NA
TPH-GRO	ND	ND	ND	ND	ND	ND	ND	NA
VOCs (ug/kg)								
Total Xylenes	ND	ND	0.0085	ND	ND	ND	ND	230,000
Cis-1,2-dichloroethylene	ND	ND	ND	ND	ND	ND	0.0041	250,000
PAHs (ug/kg)								
Benzo(a)anthracene	ND	ND	ND	0.45	ND	ND	ND	29,000
Benzo(a)pyrene	ND	ND	ND	0.46	ND	ND	ND	2,900
Benzo(b)fluoranthene	ND	ND	ND	0.56	ND	ND	ND	29,000
Benzo(g,h,i)perylene	ND	ND	ND	0.27	ND	ND	ND	2,300,000
Chrysene	ND	ND	ND	0.47	ND	ND	ND	2,900,000
Fluoranthene	ND	ND	ND	0.85	ND	ND	ND	3,000,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	0.28	ND	ND	ND	29,000
Phenanthrene	ND	ND	ND	0.83	ND	ND	ND	2,300,000
Pyrene	ND	ND	ND	0.72	ND	ND	ND	23,000,000

ND – Results are below laboratory detection limits

DEQ Voluntary Remediation Program Commercial/Industrial Screening Limit

NA – Screening Limit is not established

Based on the analytical results, concentrations of TPH-GRO and TPH-DRO were reported below the laboratory detection limits in the samples submitted for laboratory analysis with the exception of SB-04. TPH-DRO was reported at a concentration of 130 milligrams per kilogram



(mg/kg) in this sample. SB-04 was located north of the building between the building and the alley.

Based on the analytical results, concentrations of VOCs were reported below the laboratory detection limit in the soil samples submitted for laboratory analysis with the exception of total xylenes in SB-03 and cis-1,2-dichloroethylene in SB-07. Total xylenes were reported in SB-03 with a concentration of 0.0085 micrograms per kilogram (ug/kg) and cis-1,2-dichloroethylene was reported in SB-07 with a concentration of 0.0041.

Based on the analytical results, concentrations of PAHs were reported below the laboratory detection limit in the soil samples submitted for laboratory analysis with the exception sample SB-04. Several PAHs were detected in this sample above the reporting limits.

The detected concentrations of VOCs and PAHs were compared to the Virginia Department of Environmental Quality's (DEQ) Voluntary Remediation Program (VRP) Commercial/Industrial Screening Limits. The detected concentrations were reported below the DEQ VRP screening limit for commercial/industrial soil.

GROUNDWATER SAMPLING

Groundwater was encountered in the borings at depths ranging from 15 to 24 feet bgs and was sampled in three locations. The following section describes the sampling activities and findings. Please refer to the attached Laboratory Certificates of Analysis for additional information.

GROUNDWATER SAMPLING AND RESULTS

F&R mobilized to the Site on June 14, 2018, to conduct sampling activities. Three groundwater samples were collected from borings SB-01, SB-03, and SB-06. Temporary monitoring wells were installed by placing PVC in the borings. Three well volumes of groundwater was removed from the wells using a peristaltic pump. Temperature, pH, conductivity, and turbidity were measured during this process using a Horiba U52 water quality meter. When the readings stabilized to within 10% of the previous reading a groundwater sample was collected from the three temporary monitoring wells.

The samples were collected, placed in appropriate pre-labeled sample containers and delivered to Con-Test under chain of custody protocol for analysis. The groundwater samples were analyzed for TPH-DRO, TPH-GRO, VOCs, and PAHs. TPH-DRO was not analyzed from monitoring well GW-03 due to insufficient sample volume. Please refer to the Sample Location Map for the boring locations. Table 3 presents the groundwater sample analysis results:



Table 3: Groundwater Sample Results

Parameter	GW-01	GW-03	GW-06	DEQ Screening Limit
<i>Petroleum (mg/l)</i>				
TPH-DRO	ND	NS	ND	NA
TPH-GRO	0.039	ND	0.034	NA
<i>VOCs (ug/l)</i>				
Benzene	ND	ND	6.8	1,240
Methyl tert-butyl ether	ND	ND	1.9	19,700
Cis-1,2-Dichloroethylene	1.6	ND	ND	NA
Tetrachloroethylene	81	1.2	ND	24.2
Trichloroethylene	4.0	ND	ND	2.18

ND – Results are below laboratory detection limits

DEQ Voluntary Remediation Program Commercial/Industrial Screening Limit

NA – Screening Limit is not established

Red – Concentration is above the screening limit

Based on the analytical results, concentrations of TPH-GRO were reported above the laboratory detection limits for the groundwater samples submitted for analysis. Concentration of TPH-GRO were reported at 0.039 milligrams per liter (mg/l) in GW-01 and 0.034 mg/l in GW-06. Concentration of TPH-DRO were reported below the detection limits for the samples submitted for analysis.

VOCs including benzene, cis-1,2-dichloroethylene, methyl tert-butyl ether, tetrachloroethylene, and trichloroethylene were reported in groundwater samples submitted for laboratory analysis. The detected concentrations of VOCs were reported below the DEQ VRP Commercial/Industrial Screening Limits with the exception of tetrachloroethylene and trichloroethylene in GW-01. Concentrations of tetrachloroethylene were reported at 81 micrograms per liter (ug/l) in GW-01 and 1.2 ug/l in GW-03. The screening limit for tetrachloroethylene is 24.2 ug/l. Trichloroethylene was detected in GW-01 with a concentration of 4.0 ug/l. The screening limit for trichloroethylene is 2.18 ug/l. Sample GW-01 was located in the grassy fenced area east of the building.

CONCLUSIONS AND RECOMMENDATIONS

Based on the analytical results, concentrations of TPH-DRO, total xylenes, cis-1,2-dichloroethylene, and several PAHs were reported above the laboratory detection limits in the soil samples submitted for laboratory analysis. The detected concentrations were below the DEQ VRP Commercial/Industrial Screening Limits for soil.



Based on the analytical results, concentrations of TPH-GRO, benzene, cis-1,2-dichloroethylene, methyl tert-butyl ether, tetrachloroethylene, and trichloroethylene were reported above the laboratory detection limits for the groundwater samples submitted for analysis. The detected concentrations of VOCs were reported below the DEQ VRP Commercial/Industrial Screening Limits with the exception of tetrachloroethylene and trichloroethylene. Concentrations of tetrachloroethylene and trichloroethylene were reported above the screening limit for groundwater in sample GW-01.

Tetrachloroethylene and trichloroethylene are VOCs associated with industrial activities and dry cleaning operations and are highly volatile. Concentrations above the groundwater screening limit indicate a potential for vapor intrusion into the breathing air of the building. Based on the detected concentrations of tetrachloroethylene and trichloroethylene in the groundwater at the Site, F&R recommends performing collecting vapor samples from below the slab on the building to determine if the contaminants reported in the groundwater can be detected under the slab of the building.

F&R appreciates the opportunity to provide you with these environmental consulting services. Should you have any questions regarding this report or require additional services, please feel free to contact us at your convenience.

Respectfully,
FROEHLING & ROBERTSON, INC.

A handwritten signature in black ink that appears to read "Stephanie P. Golembeski".

Stephanie P. Golembeski

Environmental Project Manager

A handwritten signature in black ink that appears to read "Zachary C. Parker".

Zachary C. Parker

Manager, Environmental

Attachments: Limitations, Sample Location Map, Soil Boring Logs, Laboratory Analysis



Limitations

This report has been prepared for exclusive use by the City of Richmond (the client). These services have been performed in accordance with generally accepted environmental practices. As with any subsurface investigation, actual conditions exist only at the precise locations from which the samples were taken. Certain inferences are based on the results of sampling to form a professional opinion of conditions in areas beyond those from which the samples were taken. No other warranty, expressed or implied, is made. Our conclusions and recommendations are based on information provided to us by others and our Site observations. Our observations are based on conditions readily observed at the time of our investigation. The contents of the report should not be construed in any way as a recommendation to purchase, sell, or develop the project Site.

F&R by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the Site, or otherwise take responsibility for reporting to local, state, or federal public agencies any conditions that may present a potential danger to public health safety or the environment. We understand that the client will notify appropriate regulatory agencies of potential impact, risks, or other requirements as necessary. F&R assumes no responsibility for investigation, remediation, or liability associated with environmental impact to or from the project property regardless of the date of impact discovery.



Sample Location Map



Google



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BORING LOCATION MAP

2908 P Street
Richmond, VA

Project No.:	54V-0288	Scale:	NTS
Date:	15-Jun-18	Drawn:	BD
Drawing No.:	1	Checked:	



Laboratory Analysis



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

June 19, 2018

S. Golembeski
Froehling & Robertson - VA
3015 Dumbarton Road
Richmond, VA 23228

Project Location: 2908 P Street, Richmond, VA

Client Job Number:

Project Number: 54V-0288

Laboratory Work Order Number: 18F0602

Enclosed are results of analyses for samples received by the laboratory on June 12, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Kerry K. McGee". The signature is fluid and cursive, with "Kerry" on the top line and "K. McGee" on the bottom line.

Kerry K. McGee
Project Manager

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Froehling & Robertson - VA
3015 Dumbarton Road
Richmond, VA 23228
ATTN: S. Golembeski

REPORT DATE: 6/19/2018

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 54V-0288

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 18F0602

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 2908 P Street, Richmond, VA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
SB-01/soil	18F0602-01	Soil		SM 2540G SW-846 8015C SW-846 8260C SW-846 8270D	
GW-01/Ground water	18F0602-02	Ground Water		SW-846 8015C SW-846 8260C SW-846 8270D	
SB-02/soil	18F0602-03	Soil		SM 2540G SW-846 8015C SW-846 8260C SW-846 8270D	
SB-03/soil	18F0602-04	Soil		SM 2540G SW-846 8015C SW-846 8260C SW-846 8270D	
GW-03/Ground water	18F0602-05	Ground Water		SW-846 8015C SW-846 8260C SW-846 8270D	
SB-04/soil	18F0602-06	Soil		SM 2540G SW-846 8015C SW-846 8260C SW-846 8270D	
SB-05/soil	18F0602-07	Soil		SM 2540G SW-846 8015C SW-846 8260C SW-846 8270D	
SB-06/soil	18F0602-08	Soil		SM 2540G SW-846 8015C SW-846 8260C SW-846 8270D	
GW-06/Ground water	18F0602-09	Ground Water		SW-846 8015C SW-846 8260C SW-846 8270D	
SB-07/soil	18F0602-10	Soil		SM 2540G SW-846 8015C SW-846 8260C SW-846 8270D	



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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8270 , only PAHs were requested and reported for samples 18F0602-02,05,09.



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SW-846 8015C

Qualifications:

Z-01

Potential false positive result due to a non-GRO hydrocarbon peak within the C6-C10 gasoline range.

Analyte & Samples(s) Qualified:

Gasoline Range Organics (GRO)

18F0602-02[GW-01/Ground water]

SW-846 8260C

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

Acetone

B205753-BS1, B205753-BSD1, S024366-CCV1

Bromochloromethane

B205753-BS1, B205753-BSD1, S024366-CCV1

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Methyl Acetate

18F0602-05[GW-03/Ground water], 18F0602-09[GW-06/Ground water], B205833-BLK1, B205833-BS1, B205833-BSD1

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Bromomethane

18F0602-02[GW-01/Ground water], B205753-BLK1, B205753-BS1, B205753-BSD1, S024366-CCV1

Carbon Disulfide

18F0602-05[GW-03/Ground water], 18F0602-09[GW-06/Ground water], B205833-BLK1, B205833-BS1, B205833-BSD1, S024401-CCV1

Dichlorodifluoromethane (Freon 1)

18F0602-01[SB-01/soil], 18F0602-03[SB-02/soil], 18F0602-04[SB-03/soil], 18F0602-05[GW-03/Ground water], 18F0602-06[SB-04/soil], 18F0602-07[SB-05/soil], 18F0602-08[SB-06/soil], 18F0602-09[GW-06/Ground water], 18F0602-10[SB-07/soil], B205833-BLK1, B205833-BS1, B205833-BSD1, B205838-BLK1, B205838-BS1, B205838-BSD1, S024355-CCV1, S024401-CCV1

Naphthalene

18F0602-02[GW-01/Ground water], B205753-BLK1, B205753-BS1, B205753-BSD1, S024366-CCV1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,1,2-Trichloro-1,2,2-trifluoroethan

B205753-BS1, B205753-BSD1, S024366-CCV1

Bromomethane

B205833-BS1, B205833-BSD1, S024401-CCV1

Hexachlorobutadiene

B205833-BS1, B205833-BSD1, S024401-CCV1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Bromomethane

18F0602-01[SB-01/soil], 18F0602-03[SB-02/soil], 18F0602-04[SB-03/soil], 18F0602-06[SB-04/soil], 18F0602-07[SB-05/soil], 18F0602-08[SB-06/soil], 18F0602-10[SB-07/soil], B205838-BLK1, B205838-BS1, B205838-BSD1, S024355-CCV1

Dichlorodifluoromethane (Freon 1)

18F0602-01[SB-01/soil], 18F0602-03[SB-02/soil], 18F0602-04[SB-03/soil], 18F0602-06[SB-04/soil], 18F0602-07[SB-05/soil], 18F0602-08[SB-06/soil], 18F0602-10[SB-07/soil], B205753-BS1, B205753-BSD1, B205838-BLK1, B205838-BS1, B205838-BSD1, S024355-CCV1, S024366-CCV1



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V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Bromochloromethane

18F0602-05[GW-03/Ground water], 18F0602-09[GW-06/Ground water], B205833-BLK1, B205833-BS1, B205833-BSD1, S024401-CCV1

Hexachlorobutadiene

18F0602-05[GW-03/Ground water], 18F0602-09[GW-06/Ground water], B205833-BLK1, B205833-BS1, B205833-BSD1, S024401-CCV1

SW-846 8015C

Gasoline Range Organics (2-Methylpentane through 1,2,4-Trimethylbenzene) is quantitated against a calibration made with an unleaded gasoline composite standard.

Diesel Range Organics (C10-C28) is quantitated against a calibration made with a #2 fuel oil standard.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod E. Kopyscinski".

Tod E. Kopyscinski
Laboratory Director



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-01/soil

Sampled: 6/11/2018 09:41

Sample ID: 18F0602-01

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Acrylonitrile	ND	0.0053	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Benzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Bromobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Bromoform	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Bromomethane	ND	0.0088	mg/Kg dry	1	V-34	SW-846 8260C	6/15/18	6/15/18 13:41	MFF
2-Butanone (MEK)	ND	0.035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
tert-Butyl Alcohol (TBA)	ND	0.035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
n-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
sec-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
tert-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Carbon Disulfide	ND	0.0053	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Carbon Tetrachloride	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Chlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Chlorodibromomethane	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Chloroethane	ND	0.018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Chloroform	ND	0.0035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Chloromethane	ND	0.0088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
2-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
4-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2-Dibromoethane (EDB)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Dibromomethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,3-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,4-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
trans-1,4-Dichloro-2-butene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.018	mg/Kg dry	1	V-05, V-34	SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1-Dichloroethylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
cis-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
trans-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,3-Dichloropropane	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
2,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1-Dichloropropene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
cis-1,3-Dichloropropene	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
trans-1,3-Dichloropropene	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Diethyl Ether	ND	0.018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 09:41

Field Sample #: SB-01/soil**Sample ID:** 18F0602-01**Sample Matrix:** Soil**Volatile Organic Compounds by GC/MS**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,4-Dioxane	ND	0.088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Ethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Hexachlorobutadiene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
2-Hexanone (MBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Isopropylbenzene (Cumene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Methyl Acetate	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Methyl Cyclohexane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Methylene Chloride	ND	0.018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Naphthalene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
n-Propylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Styrene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1,1,2-Tetrachloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1,2,2-Tetrachloroethane	ND	0.00088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Tetrachloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Tetrahydrofuran	ND	0.0088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Toluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2,3-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2,4-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,3,5-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1,1-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1,2-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Trichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2,3-Trichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,2,4-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
1,3,5-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Vinyl Chloride	ND	0.0088	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
m+p Xylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
o-Xylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 13:41	MFF
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1,2-Dichloroethane-d4		98.6	70-130				6/15/18	13:41	
Toluene-d8		101	70-130				6/15/18	13:41	
4-Bromofluorobenzene		100	70-130				6/15/18	13:41	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-01/soil

Sampled: 6/11/2018 09:41

Sample ID: 18F0602-01

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Acenaphthylene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Benzo(a)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Benzo(a)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Benzo(b)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Benzo(g,h,i)perylene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Benzo(k)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Chrysene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Dibenz(a,h)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Fluorene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Indeno(1,2,3-cd)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
2-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Naphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Phenanthrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:02	CDT
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	55.0	30-130						6/18/18 18:02	
2-Fluorobiphenyl	51.4	30-130						6/18/18 18:02	
p-Terphenyl-d14	66.0	30-130						6/18/18 18:02	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-01/soil

Sampled: 6/11/2018 09:41

Sample ID: 18F0602-01Sample Matrix: Soil**Petroleum Hydrocarbons Analyses**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	1.1	mg/Kg dry	1		SW-846 8015C	6/15/18	6/15/18 20:10	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1-Chloro-3-fluorobenzene	121	70-130					6/15/18 20:10		
2-Fluorobiphenyl	63.1	40-140					6/18/18 16:02		



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 09:41

Field Sample #: SB-01/soil**Sample ID:** 18F0602-01Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	86.8		% Wt	1		SM 2540G	6/14/18	6/15/18 7:11	MRL



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-01/Ground water

Sampled: 6/11/2018 12:01

Sample ID: 18F0602-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Bromomethane	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/14/18	6/15/18 16:39	LBD
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
cis-1,2-Dichloroethylene	1.6	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-01/Ground water

Sampled: 6/11/2018 12:01

Sample ID: 18F0602-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,4-Dioxane	ND	100	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Hexachlorobutadiene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Methyl Acetate	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Methyl Cyclohexane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/14/18	6/15/18 16:39	LBD
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Tetrachloroethylene	81	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Trichloroethylene	4.0	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/14/18	6/15/18 16:39	LBD
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	92.2	70-130					6/15/18 16:39		
Toluene-d8	100	70-130					6/15/18 16:39		
4-Bromofluorobenzene	101	70-130					6/15/18 16:39		



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-01/Ground water

Sampled: 6/11/2018 12:01

Sample ID: 18F0602-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.30	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Acenaphthylene (SIM)	ND	0.30	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Anthracene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Benzo(a)anthracene (SIM)	ND	0.050	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Benzo(a)pyrene (SIM)	ND	0.10	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Benzo(g,h,i)perylene (SIM)	ND	0.50	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Chrysene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Fluoranthene (SIM)	ND	0.50	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Fluorene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
2-Methylnaphthalene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Naphthalene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Phenanthrene (SIM)	ND	0.050	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Pyrene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 21:53	IMR
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	101	30-130						6/18/18 21:53	
2-Fluorobiphenyl	86.4	30-130						6/18/18 21:53	
p-Terphenyl-d14	71.8	30-130						6/18/18 21:53	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 12:01

Field Sample #: GW-01/Ground water

Sample ID: 18F0602-02

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	0.039	0.010	mg/L	1	Z-01	SW-846 8015C	6/15/18	6/15/18 17:48	EEH
Diesel Range Organics	ND	0.21	mg/L	1		SW-846 8015C	6/14/18	6/16/18 15:41	RMW
Surrogates									
		% Recovery	Recovery Limits		Flag/Qual				
1-Chloro-3-fluorobenzene		125	70-130					6/15/18 17:48	
2-Fluorobiphenyl		71.8	40-140					6/16/18 15:41	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-02/soil

Sampled: 6/11/2018 10:28

Sample ID: 18F0602-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Acrylonitrile	ND	0.0051	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Benzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Bromobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Bromoform	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Bromomethane	ND	0.0085	mg/Kg dry	1	V-34	SW-846 8260C	6/15/18	6/15/18 14:09	MFF
2-Butanone (MEK)	ND	0.034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
tert-Butyl Alcohol (TBA)	ND	0.034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
n-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
sec-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
tert-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Carbon Disulfide	ND	0.0051	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Carbon Tetrachloride	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Chlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Chlorodibromomethane	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Chloroethane	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Chloroform	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Chloromethane	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
2-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
4-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2-Dibromoethane (EDB)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Dibromomethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,3-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,4-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
trans-1,4-Dichloro-2-butene	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.017	mg/Kg dry	1	V-05, V-34	SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1-Dichloroethylene	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
cis-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
trans-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,3-Dichloropropane	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
2,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1-Dichloropropene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
cis-1,3-Dichloropropene	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
trans-1,3-Dichloropropene	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Diethyl Ether	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-02/soil

Sampled: 6/11/2018 10:28

Sample ID: 18F0602-03

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,4-Dioxane	ND	0.085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Ethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Hexachlorobutadiene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
2-Hexanone (MBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Isopropylbenzene (Cumene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Methyl Acetate	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Methyl Cyclohexane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Methylene Chloride	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Naphthalene	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
n-Propylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Styrene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1,1,2-Tetrachloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1,2,2-Tetrachloroethane	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Tetrachloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Tetrahydrofuran	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Toluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2,3-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2,4-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,3,5-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1,1-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1,2-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Trichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2,3-Trichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,2,4-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
1,3,5-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Vinyl Chloride	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
m+p Xylene	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
o-Xylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:09	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	98.2	70-130						6/15/18 14:09	
Toluene-d8	103	70-130						6/15/18 14:09	
4-Bromofluorobenzene	98.2	70-130						6/15/18 14:09	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-02/soil

Sampled: 6/11/2018 10:28

Sample ID: 18F0602-03

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Acenaphthylene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Benzo(a)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Benzo(a)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Benzo(b)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Benzo(g,h,i)perylene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Benzo(k)fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Chrysene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Dibenz(a,h)anthracene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Fluoranthene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Fluorene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Indeno(1,2,3-cd)pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
2-Methylnaphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Naphthalene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Phenanthrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Pyrene	ND	0.20	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:25	CDT
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	65.7	30-130						6/18/18 18:25	
2-Fluorobiphenyl	61.7	30-130						6/18/18 18:25	
p-Terphenyl-d14	72.0	30-130						6/18/18 18:25	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-02/soil

Sampled: 6/11/2018 10:28

Sample ID: 18F0602-03Sample Matrix: Soil**Petroleum Hydrocarbons Analyses**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	1.1	mg/Kg dry	1		SW-846 8015C	6/15/18	6/15/18 20:45	EEH
Diesel Range Organics	ND	9.9	mg/Kg dry	1		SW-846 8015C	6/15/18	6/18/18 22:09	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1-Chloro-3-fluorobenzene		120	70-130				6/15/18	20:45	
2-Fluorobiphenyl		64.4	40-140				6/18/18	22:09	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-02/soil

Sampled: 6/11/2018 10:28

Sample ID: 18F0602-03Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	83.9		% Wt	1		SM 2540G	6/14/18	6/15/18 7:11	MRL



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-03/soil

Sampled: 6/11/2018 11:37

Sample ID: 18F0602-04Sample Matrix: Soil**Volatile Organic Compounds by GC/MS**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Acrylonitrile	ND	0.0051	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Benzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Bromobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Bromoform	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Bromomethane	ND	0.0085	mg/Kg dry	1	V-34	SW-846 8260C	6/15/18	6/15/18 14:36	MFF
2-Butanone (MEK)	ND	0.034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
tert-Butyl Alcohol (TBA)	ND	0.034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
n-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
sec-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
tert-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Carbon Disulfide	ND	0.0051	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Carbon Tetrachloride	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Chlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Chlorodibromomethane	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Chloroethane	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Chloroform	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Chloromethane	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
2-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
4-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2-Dibromoethane (EDB)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Dibromomethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,3-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,4-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
trans-1,4-Dichloro-2-butene	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.017	mg/Kg dry	1	V-05, V-34	SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1-Dichloroethylene	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
cis-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
trans-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,3-Dichloropropane	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
2,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1-Dichloropropene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
cis-1,3-Dichloropropene	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
trans-1,3-Dichloropropene	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Diethyl Ether	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-03/soil

Sampled: 6/11/2018 11:37

Sample ID: 18F0602-04**Sample Matrix:** Soil**Volatile Organic Compounds by GC/MS**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,4-Dioxane	ND	0.085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Ethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Hexachlorobutadiene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
2-Hexanone (MBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Isopropylbenzene (Cumene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Methyl Acetate	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Methyl Cyclohexane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Methylene Chloride	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Naphthalene	ND	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
n-Propylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Styrene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1,1,2-Tetrachloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1,2,2-Tetrachloroethane	ND	0.00085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Tetrachloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Tetrahydrofuran	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Toluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2,3-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2,4-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,3,5-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1,1-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1,2-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Trichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2,3-Trichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,2,4-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
1,3,5-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Vinyl Chloride	ND	0.0085	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
m+p Xylene	0.0059	0.0034	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
o-Xylene	0.0026	0.0017	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 14:36	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	97.8	70-130						6/15/18 14:36	
Toluene-d8	101	70-130						6/15/18 14:36	
4-Bromofluorobenzene	101	70-130						6/15/18 14:36	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-03/soil

Sampled: 6/11/2018 11:37

Sample ID: 18F0602-04

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Acenaphthylene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Benzo(a)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Benzo(a)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Benzo(b)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Chrysene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Fluorene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Naphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Phenanthrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 18:48	CDT
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	54.1	30-130						6/18/18 18:48	
2-Fluorobiphenyl	51.7	30-130						6/18/18 18:48	
p-Terphenyl-d14	65.8	30-130						6/18/18 18:48	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 11:37

Field Sample #: SB-03/soil**Sample ID:** 18F0602-04Sample Matrix: Soil**Petroleum Hydrocarbons Analyses**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	1.1	mg/Kg dry	1		SW-846 8015C	6/15/18	6/15/18 21:21	EEH
Diesel Range Organics	ND	10	mg/Kg dry	1		SW-846 8015C	6/15/18	6/18/18 22:29	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1-Chloro-3-fluorobenzene		122	70-130				6/15/18	21:21	
2-Fluorobiphenyl		61.1	40-140				6/18/18	22:29	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 11:37

Field Sample #: SB-03/soil**Sample ID:** 18F0602-04Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.6		% Wt	1		SM 2540G	6/14/18	6/15/18 7:11	MRL

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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-03/Ground water

Sampled: 6/11/2018 13:00

Sample ID: 18F0602-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Bromochloromethane	ND	1.0	µg/L	1	V-35	SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Carbon Disulfide	ND	4.0	µg/L	1	V-05	SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-03/Ground water

Sampled: 6/11/2018 13:00

Sample ID: 18F0602-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,4-Dioxane	ND	50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Hexachlorobutadiene	ND	0.60	µg/L	1	V-35	SW-846 8260C	6/18/18	6/18/18 10:49	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Methyl Acetate	ND	1.0	µg/L	1	L-04	SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Methyl Cyclohexane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Tetrachloroethylene	1.2	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 10:49	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	93.0	70-130					6/18/18 10:49		
Toluene-d8	100	70-130					6/18/18 10:49		
4-Bromofluorobenzene	97.5	70-130					6/18/18 10:49		



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-03/Ground water

Sampled: 6/11/2018 13:00

Sample ID: 18F0602-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.29	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Acenaphthylene (SIM)	ND	0.29	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Anthracene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Benzo(a)anthracene (SIM)	ND	0.049	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Benzo(a)pyrene (SIM)	ND	0.098	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Benzo(b)fluoranthene (SIM)	ND	0.049	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Benzo(g,h,i)perylene (SIM)	ND	0.49	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Chrysene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Fluoranthene (SIM)	ND	0.49	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Fluorene (SIM)	ND	0.98	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
2-Methylnaphthalene (SIM)	ND	0.98	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Naphthalene (SIM)	ND	0.98	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Phenanthrene (SIM)	ND	0.049	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Pyrene (SIM)	ND	0.98	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:21	IMR
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	108	30-130						6/18/18 22:21	
2-Fluorobiphenyl	89.7	30-130						6/18/18 22:21	
p-Terphenyl-d14	79.4	30-130						6/18/18 22:21	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-03/Ground water

Sampled: 6/11/2018 13:00

Sample ID: 18F0602-05Sample Matrix: Ground Water**Petroleum Hydrocarbons Analyses**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	0.010	mg/L	1		SW-846 8015C	6/15/18	6/15/18 18:23	EEH
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1-Chloro-3-fluorobenzene	120	70-130					6/15/18 18:23		



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-04/soil

Sampled: 6/11/2018 12:44

Sample ID: 18F0602-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Acrylonitrile	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Benzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Bromobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Bromoform	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Bromomethane	ND	0.0093	mg/Kg dry	1	V-34	SW-846 8260C	6/15/18	6/15/18 15:03	MFF
2-Butanone (MEK)	ND	0.037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
tert-Butyl Alcohol (TBA)	ND	0.037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
n-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
sec-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
tert-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Carbon Disulfide	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Carbon Tetrachloride	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Chlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Chlorodibromomethane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Chloroethane	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Chloroform	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Chloromethane	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
2-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
4-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2-Dibromoethane (EDB)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Dibromomethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,3-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,4-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
trans-1,4-Dichloro-2-butene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.019	mg/Kg dry	1	V-05, V-34	SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1-Dichloroethylene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
cis-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
trans-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,3-Dichloropropane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
2,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1-Dichloropropene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
cis-1,3-Dichloropropene	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
trans-1,3-Dichloropropene	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Diethyl Ether	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-04/soil

Sampled: 6/11/2018 12:44

Sample ID: 18F0602-06

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,4-Dioxane	ND	0.093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Ethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Hexachlorobutadiene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
2-Hexanone (MBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Isopropylbenzene (Cumene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Methyl Acetate	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Methyl Cyclohexane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Methylene Chloride	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Naphthalene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
n-Propylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Styrene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1,1,2-Tetrachloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1,2,2-Tetrachloroethane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Tetrachloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Tetrahydrofuran	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Toluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2,3-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2,4-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,3,5-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1,1-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1,2-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Trichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2,3-Trichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,2,4-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
1,3,5-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Vinyl Chloride	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
m+p Xylene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
o-Xylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:03	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	96.8	70-130						6/15/18 15:03	
Toluene-d8	101	70-130						6/15/18 15:03	
4-Bromofluorobenzene	103	70-130						6/15/18 15:03	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-04/soil

Sampled: 6/11/2018 12:44

Sample ID: 18F0602-06

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Acenaphthylene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Anthracene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Benzo(a)anthracene	0.45	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Benzo(a)pyrene	0.46	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Benzo(b)fluoranthene	0.56	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Benzo(g,h,i)perylene	0.27	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Benzo(k)fluoranthene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Chrysene	0.47	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Dibenz(a,h)anthracene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Fluoranthene	0.85	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Fluorene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Indeno(1,2,3-cd)pyrene	0.28	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
2-Methylnaphthalene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Naphthalene	ND	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Phenanthrene	0.83	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Pyrene	0.72	0.23	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:10	CDT
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	62.8	30-130						6/18/18 19:10	
2-Fluorobiphenyl	57.5	30-130						6/18/18 19:10	
p-Terphenyl-d14	65.1	30-130						6/18/18 19:10	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 12:44

Field Sample #: SB-04/soil**Sample ID:** 18F0602-06Sample Matrix: Soil**Petroleum Hydrocarbons Analyses**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	1.5	mg/Kg dry	1		SW-846 8015C	6/15/18	6/15/18 21:56	EEH
Diesel Range Organics	130	11	mg/Kg dry	1		SW-846 8015C	6/15/18	6/17/18 23:45	RMW
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1-Chloro-3-fluorobenzene	125	70-130					6/15/18 21:56		
2-Fluorobiphenyl	69.6	40-140					6/17/18 23:45		



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 12:44

Field Sample #: SB-04/soil**Sample ID:** 18F0602-06Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	75.2		% Wt	1		SM 2540G	6/14/18	6/15/18 7:11	MRL



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-05/soil

Sampled: 6/11/2018 13:32

Sample ID: 18F0602-07

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Acrylonitrile	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Benzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Bromobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Bromochloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Bromodichloromethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Bromoform	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Bromomethane	ND	0.0094	mg/Kg dry	1	V-34	SW-846 8260C	6/15/18	6/15/18 15:30	MFF
2-Butanone (MEK)	ND	0.038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
tert-Butyl Alcohol (TBA)	ND	0.038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
n-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
sec-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
tert-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Carbon Disulfide	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Carbon Tetrachloride	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Chlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Chlorodibromomethane	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Chloroethane	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Chloroform	ND	0.0038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Chloromethane	ND	0.0094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
2-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
4-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2-Dibromoethane (EDB)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Dibromomethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,3-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,4-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
trans-1,4-Dichloro-2-butene	ND	0.0038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.019	mg/Kg dry	1	V-05, V-34	SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1-Dichloroethylene	ND	0.0038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
cis-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
trans-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,3-Dichloropropane	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
2,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1-Dichloropropene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
cis-1,3-Dichloropropene	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
trans-1,3-Dichloropropene	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Diethyl Ether	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-05/soil

Sampled: 6/11/2018 13:32

Sample ID: 18F0602-07

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,4-Dioxane	ND	0.094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Ethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Hexachlorobutadiene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
2-Hexanone (MBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Isopropylbenzene (Cumene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Methyl Acetate	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Methyl Cyclohexane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Methylene Chloride	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Naphthalene	ND	0.0038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
n-Propylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Styrene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1,1,2-Tetrachloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1,2,2-Tetrachloroethane	ND	0.00094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Tetrachloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Tetrahydrofuran	ND	0.0094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Toluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2,3-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2,4-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,3,5-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1,1-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1,2-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Trichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2,3-Trichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,2,4-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
1,3,5-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Vinyl Chloride	ND	0.0094	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
m+p Xylene	ND	0.0038	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
o-Xylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:30	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	100	70-130						6/15/18 15:30	
Toluene-d8	99.9	70-130						6/15/18 15:30	
4-Bromofluorobenzene	101	70-130						6/15/18 15:30	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-05/soil

Sampled: 6/11/2018 13:32

Sample ID: 18F0602-07

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Acenaphthylene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Anthracene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Benzo(a)anthracene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Benzo(a)pyrene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Benzo(b)fluoranthene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Benzo(g,h,i)perylene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Benzo(k)fluoranthene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Chrysene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Dibenz(a,h)anthracene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Fluoranthene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Fluorene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Indeno(1,2,3-cd)pyrene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
2-Methylnaphthalene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Naphthalene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Phenanthrene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Pyrene	ND	0.22	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:33	CDT
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	48.8	30-130						6/18/18 19:33	
2-Fluorobiphenyl	45.3	30-130						6/18/18 19:33	
p-Terphenyl-d14	55.2	30-130						6/18/18 19:33	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 13:32

Field Sample #: SB-05/soil**Sample ID:** 18F0602-07Sample Matrix: Soil**Petroleum Hydrocarbons Analyses**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	1.2	mg/Kg dry	1		SW-846 8015C	6/15/18	6/15/18 22:32	EEH
Diesel Range Organics	ND	11	mg/Kg dry	1		SW-846 8015C	6/15/18	6/18/18 0:03	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1-Chloro-3-fluorobenzene		121	70-130				6/15/18	22:32	
2-Fluorobiphenyl		50.2	40-140				6/18/18	0:03	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 13:32

Field Sample #: SB-05/soil**Sample ID:** 18F0602-07Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	77.1		% Wt	1		SM 2540G	6/14/18	6/15/18 7:12	MRL



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-06/soil

Sampled: 6/11/2018 14:28

Sample ID: 18F0602-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Acrylonitrile	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Benzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Bromobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Bromoform	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Bromomethane	ND	0.0093	mg/Kg dry	1	V-34	SW-846 8260C	6/15/18	6/15/18 15:57	MFF
2-Butanone (MEK)	ND	0.037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
tert-Butyl Alcohol (TBA)	ND	0.037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
n-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
sec-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
tert-Butylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Carbon Disulfide	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Carbon Tetrachloride	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Chlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Chlorodibromomethane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Chloroethane	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Chloroform	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Chloromethane	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
2-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
4-Chlorotoluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2-Dibromoethane (EDB)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Dibromomethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,3-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,4-Dichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
trans-1,4-Dichloro-2-butene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.019	mg/Kg dry	1	V-05, V-34	SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2-Dichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1-Dichloroethylene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
cis-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
trans-1,2-Dichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,3-Dichloropropane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
2,2-Dichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1-Dichloropropene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
cis-1,3-Dichloropropene	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
trans-1,3-Dichloropropene	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Diethyl Ether	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-06/soil

Sampled: 6/11/2018 14:28

Sample ID: 18F0602-08

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,4-Dioxane	ND	0.093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Ethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Hexachlorobutadiene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
2-Hexanone (MBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Isopropylbenzene (Cumene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Methyl Acetate	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Methyl Cyclohexane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Methylene Chloride	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Naphthalene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
n-Propylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Styrene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1,1,2-Tetrachloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1,2,2-Tetrachloroethane	ND	0.00093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Tetrachloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Tetrahydrofuran	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Toluene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2,3-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2,4-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,3,5-Trichlorobenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1,1-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1,2-Trichloroethane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Trichloroethylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2,3-Trichloropropane	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,2,4-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
1,3,5-Trimethylbenzene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Vinyl Chloride	ND	0.0093	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
m+p Xylene	ND	0.0037	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
o-Xylene	ND	0.0019	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 15:57	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	98.8	70-130						6/15/18 15:57	
Toluene-d8	100	70-130						6/15/18 15:57	
4-Bromofluorobenzene	99.1	70-130						6/15/18 15:57	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-06/soil

Sampled: 6/11/2018 14:28

Sample ID: 18F0602-08

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Acenaphthylene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Benzo(a)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Benzo(a)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Benzo(b)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Chrysene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Fluorene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Naphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Phenanthrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 19:56	CDT
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	54.4	30-130						6/18/18 19:56	
2-Fluorobiphenyl	50.2	30-130						6/18/18 19:56	
p-Terphenyl-d14	62.3	30-130						6/18/18 19:56	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 14:28

Field Sample #: SB-06/soil

Sample ID: 18F0602-08

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	1.1	mg/Kg dry	1		SW-846 8015C	6/15/18	6/15/18 23:07	EEH
Diesel Range Organics	ND	10	mg/Kg dry	1		SW-846 8015C	6/15/18	6/18/18 0:21	RMW
Surrogates									
1-Chloro-3-fluorobenzene	120		70-130				6/15/18	23:07	
2-Fluorobiphenyl	60.7		40-140				6/18/18	0:21	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 14:28

Field Sample #: SB-06/soil**Sample ID:** 18F0602-08Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	82.2		% Wt	1		SM 2540G	6/14/18	6/15/18 7:12	MRL



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-06/Ground water

Sampled: 6/11/2018 14:35

Sample ID: 18F0602-09

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Benzene	6.8	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Bromochloromethane	ND	1.0	µg/L	1	V-35	SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Bromoform	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Carbon Disulfide	ND	4.0	µg/L	1	V-05	SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1	V-05	SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-06/Ground water

Sampled: 6/11/2018 14:35

Sample ID: 18F0602-09Sample Matrix: Ground Water**Volatile Organic Compounds by GC/MS**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,4-Dioxane	ND	50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Hexachlorobutadiene	ND	0.60	µg/L	1	V-35	SW-846 8260C	6/18/18	6/18/18 11:15	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Methyl Acetate	ND	1.0	µg/L	1	L-04	SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Methyl tert-Butyl Ether (MTBE)	1.9	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Methyl Cyclohexane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	6/18/18	6/18/18 11:15	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	92.3	70-130					6/18/18 11:15		
Toluene-d8	98.8	70-130					6/18/18 11:15		
4-Bromofluorobenzene	97.2	70-130					6/18/18 11:15		



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: GW-06/Ground water

Sampled: 6/11/2018 14:35

Sample ID: 18F0602-09

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene (SIM)	ND	0.30	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Acenaphthylene (SIM)	ND	0.30	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Anthracene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Benzo(a)anthracene (SIM)	ND	0.050	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Benzo(a)pyrene (SIM)	ND	0.10	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Benzo(g,h,i)perylene (SIM)	ND	0.50	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Chrysene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Fluoranthene (SIM)	ND	0.50	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Fluorene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
2-Methylnaphthalene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Naphthalene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Phenanthrene (SIM)	ND	0.050	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Pyrene (SIM)	ND	1.0	µg/L	1		SW-846 8270D	6/14/18	6/18/18 22:50	IMR
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	107	30-130						6/18/18 22:50	
2-Fluorobiphenyl	90.6	30-130						6/18/18 22:50	
p-Terphenyl-d14	78.6	30-130						6/18/18 22:50	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 14:35

Field Sample #: GW-06/Ground water

Sample ID: 18F0602-09

Sample Matrix: Ground Water

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	0.034	0.010	mg/L	1		SW-846 8015C	6/15/18	6/15/18 18:59	EEH
Diesel Range Organics	ND	0.22	mg/L	1		SW-846 8015C	6/14/18	6/16/18 16:01	RMW
Surrogates									
1-Chloro-3-fluorobenzene	121		70-130					6/15/18 18:59	
2-Fluorobiphenyl	76.7		40-140					6/16/18 16:01	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-07/soil

Sampled: 6/11/2018 15:05

Sample ID: 18F0602-10

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.14	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Acrylonitrile	ND	0.0083	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Benzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Bromobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Bromochloromethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Bromodichloromethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Bromoform	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Bromomethane	ND	0.014	mg/Kg dry	1	V-34	SW-846 8260C	6/15/18	6/15/18 16:25	MFF
2-Butanone (MEK)	ND	0.056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
tert-Butyl Alcohol (TBA)	ND	0.056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
n-Butylbenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
sec-Butylbenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
tert-Butylbenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Carbon Disulfide	ND	0.0083	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Carbon Tetrachloride	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Chlorobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Chlorodibromomethane	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Chloroethane	ND	0.028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Chloroform	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Chloromethane	ND	0.014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
2-Chlorotoluene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
4-Chlorotoluene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2-Dibromoethane (EDB)	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Dibromomethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2-Dichlorobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,3-Dichlorobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,4-Dichlorobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
trans-1,4-Dichloro-2-butene	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.028	mg/Kg dry	1	V-05, V-34	SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1-Dichloroethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2-Dichloroethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1-Dichloroethylene	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
cis-1,2-Dichloroethylene	0.0041	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
trans-1,2-Dichloroethylene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2-Dichloropropane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,3-Dichloropropane	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
2,2-Dichloropropane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1-Dichloropropene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
cis-1,3-Dichloropropene	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
trans-1,3-Dichloropropene	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Diethyl Ether	ND	0.028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-07/soil

Sampled: 6/11/2018 15:05

Sample ID: 18F0602-10

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,4-Dioxane	ND	0.14	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Ethylbenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Hexachlorobutadiene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
2-Hexanone (MBK)	ND	0.028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Isopropylbenzene (Cumene)	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Methyl Acetate	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Methyl Cyclohexane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Methylene Chloride	ND	0.028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Naphthalene	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
n-Propylbenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Styrene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1,1,2-Tetrachloroethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1,2,2-Tetrachloroethane	ND	0.0014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Tetrachloroethylene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Tetrahydrofuran	ND	0.014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Toluene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2,3-Trichlorobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2,4-Trichlorobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,3,5-Trichlorobenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1,1-Trichloroethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1,2-Trichloroethane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Trichloroethylene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Trichlorofluoromethane (Freon 11)	ND	0.014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2,3-Trichloropropane	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,2,4-Trimethylbenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
1,3,5-Trimethylbenzene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Vinyl Chloride	ND	0.014	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
m+p Xylene	ND	0.0056	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
o-Xylene	ND	0.0028	mg/Kg dry	1		SW-846 8260C	6/15/18	6/15/18 16:25	MFF
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
1,2-Dichloroethane-d4	99.2	70-130						6/15/18 16:25	
Toluene-d8	102	70-130						6/15/18 16:25	
4-Bromofluorobenzene	100	70-130						6/15/18 16:25	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-07/soil

Sampled: 6/11/2018 15:05

Sample ID: 18F0602-10

Sample Matrix: Soil

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Acenaphthylene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Benzo(a)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Benzo(a)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Benzo(b)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Benzo(g,h,i)perylene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Benzo(k)fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Chrysene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Dibenz(a,h)anthracene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Fluoranthene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Fluorene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Indeno(1,2,3-cd)pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
2-Methylnaphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Naphthalene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Phenanthrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Pyrene	ND	0.21	mg/Kg dry	1		SW-846 8270D	6/15/18	6/18/18 20:18	CDT
Surrogates	% Recovery	Recovery Limits		Flag/Qual					
Nitrobenzene-d5	52.1	30-130						6/18/18 20:18	
2-Fluorobiphenyl	49.0	30-130						6/18/18 20:18	
p-Terphenyl-d14	56.9	30-130						6/18/18 20:18	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Field Sample #: SB-07/soil

Sampled: 6/11/2018 15:05

Sample ID: 18F0602-10Sample Matrix: Soil**Petroleum Hydrocarbons Analyses**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Gasoline Range Organics (GRO)	ND	1.1	mg/Kg dry	1		SW-846 8015C	6/15/18	6/15/18 23:43	EEH
Diesel Range Organics	ND	10	mg/Kg dry	1		SW-846 8015C	6/15/18	6/18/18 0:38	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1-Chloro-3-fluorobenzene		123	70-130				6/15/18	23:43	
2-Fluorobiphenyl		58.6	40-140				6/18/18	0:38	



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Project Location: 2908 P Street, Richmond, VA

Sample Description:

Work Order: 18F0602

Date Received: 6/12/2018

Sampled: 6/11/2018 15:05

Field Sample #: SB-07/soil**Sample ID:** 18F0602-10Sample Matrix: Soil

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	81.4		% Wt	1		SM 2540G	6/14/18	6/15/18 7:12	MRL



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Sample Extraction Data

Prep Method: % Solids-SM 2540G

Lab Number [Field ID]	Batch	Date
18F0602-01 [SB-01/soil]	B205714	06/14/18
18F0602-03 [SB-02/soil]	B205714	06/14/18
18F0602-04 [SB-03/soil]	B205714	06/14/18
18F0602-06 [SB-04/soil]	B205714	06/14/18
18F0602-07 [SB-05/soil]	B205714	06/14/18
18F0602-08 [SB-06/soil]	B205714	06/14/18
18F0602-10 [SB-07/soil]	B205714	06/14/18

Prep Method: SW-846 3546-SW-846 8015C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
18F0602-01 [SB-01/soil]	B205817	30.0	1.00	06/15/18
18F0602-03 [SB-02/soil]	B205817	30.2	1.00	06/15/18
18F0602-04 [SB-03/soil]	B205817	30.0	1.00	06/15/18
18F0602-06 [SB-04/soil]	B205817	30.0	1.00	06/15/18
18F0602-07 [SB-05/soil]	B205817	30.1	1.00	06/15/18
18F0602-08 [SB-06/soil]	B205817	30.2	1.00	06/15/18
18F0602-10 [SB-07/soil]	B205817	30.2	1.00	06/15/18

Prep Method: SW-846 5035/5030B-SW-846 8015C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
18F0602-01 [SB-01/soil]	B205831	6.10	5.80	06/15/18
18F0602-03 [SB-02/soil]	B205831	6.60	6.10	06/15/18
18F0602-04 [SB-03/soil]	B205831	6.60	6.10	06/15/18
18F0602-06 [SB-04/soil]	B205831	5.50	6.40	06/15/18
18F0602-07 [SB-05/soil]	B205831	7.20	6.60	06/15/18
18F0602-08 [SB-06/soil]	B205831	6.60	6.20	06/15/18
18F0602-10 [SB-07/soil]	B205831	7.10	6.30	06/15/18

Prep Method: SW-846 3510C-SW-846 8015C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18F0602-02 [GW-01/Ground water]	B205702	960	1.00	06/14/18
18F0602-09 [GW-06/Ground water]	B205702	900	1.00	06/14/18

Prep Method: SW-846 5035-SW-846 8015C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18F0602-02 [GW-01/Ground water]	B205832	5	5.00	06/15/18
18F0602-05 [GW-03/Ground water]	B205832	5	5.00	06/15/18
18F0602-09 [GW-06/Ground water]	B205832	5	5.00	06/15/18

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
18F0602-01 [SB-01/soil]	B205838	6.53	10.0	06/15/18
18F0602-03 [SB-02/soil]	B205838	7.03	10.0	06/15/18
18F0602-04 [SB-03/soil]	B205838	7.12	10.0	06/15/18



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Sample Extraction Data

Prep Method: SW-846 5035-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
18F0602-06 [SB-04/soil]	B205838	7.18	10.0	06/15/18
18F0602-07 [SB-05/soil]	B205838	6.91	10.0	06/15/18
18F0602-08 [SB-06/soil]	B205838	6.54	10.0	06/15/18
18F0602-10 [SB-07/soil]	B205838	4.42	10.0	06/15/18

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18F0602-02 [GW-01/Ground water]	B205753	5	5.00	06/14/18

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18F0602-05 [GW-03/Ground water]	B205833	5	5.00	06/18/18
18F0602-09 [GW-06/Ground water]	B205833	5	5.00	06/18/18

Prep Method: SW-846 3546-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
18F0602-01 [SB-01/soil]	B205818	30.0	1.00	06/15/18
18F0602-03 [SB-02/soil]	B205818	30.2	1.00	06/15/18
18F0602-04 [SB-03/soil]	B205818	30.0	1.00	06/15/18
18F0602-06 [SB-04/soil]	B205818	30.0	1.00	06/15/18
18F0602-07 [SB-05/soil]	B205818	30.1	1.00	06/15/18
18F0602-08 [SB-06/soil]	B205818	30.2	1.00	06/15/18
18F0602-10 [SB-07/soil]	B205818	30.2	1.00	06/15/18

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18F0602-02 [GW-01/Ground water]	B205699	1000	1.00	06/14/18
18F0602-05 [GW-03/Ground water]	B205699	820	0.800	06/14/18
18F0602-09 [GW-06/Ground water]	B205699	1000	1.00	06/14/18



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
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Batch B205753 - SW-846 5030B

Blank (B205753-BLK1)									Prepared: 06/14/18 Analyzed: 06/15/18
Acetone	ND	50	µg/L						
Acrylonitrile	ND	5.0	µg/L						
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L						
Benzene	ND	1.0	µg/L						
Bromobenzene	ND	1.0	µg/L						
Bromoform	ND	0.50	µg/L						
Bromomethane	ND	1.0	µg/L						
2-Butanone (MEK)	ND	2.0	µg/L						V-05
tert-Butyl Alcohol (TBA)	ND	20	µg/L						
n-Butylbenzene	ND	1.0	µg/L						
sec-Butylbenzene	ND	1.0	µg/L						
tert-Butylbenzene	ND	1.0	µg/L						
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L						
Carbon Disulfide	ND	4.0	µg/L						
Carbon Tetrachloride	ND	5.0	µg/L						
Chlorobenzene	ND	1.0	µg/L						
Chlorodibromomethane	ND	0.50	µg/L						
Chloroethane	ND	2.0	µg/L						
Chloroform	ND	2.0	µg/L						
Chloromethane	ND	2.0	µg/L						
2-Chlorotoluene	ND	1.0	µg/L						
4-Chlorotoluene	ND	1.0	µg/L						
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L						
1,2-Dibromoethane (EDB)	ND	0.50	µg/L						
Dibromomethane	ND	1.0	µg/L						
1,2-Dichlorobenzene	ND	1.0	µg/L						
1,3-Dichlorobenzene	ND	1.0	µg/L						
1,4-Dichlorobenzene	ND	1.0	µg/L						
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L						
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L						
1,1-Dichloroethane	ND	1.0	µg/L						
1,2-Dichloroethane	ND	1.0	µg/L						
1,1-Dichloroethylene	ND	1.0	µg/L						
cis-1,2-Dichloroethylene	ND	1.0	µg/L						
trans-1,2-Dichloroethylene	ND	1.0	µg/L						
1,2-Dichloropropane	ND	1.0	µg/L						
1,3-Dichloropropane	ND	0.50	µg/L						
2,2-Dichloropropane	ND	1.0	µg/L						
1,1-Dichloropropene	ND	2.0	µg/L						
cis-1,3-Dichloropropene	ND	0.50	µg/L						
trans-1,3-Dichloropropene	ND	0.50	µg/L						
Diethyl Ether	ND	2.0	µg/L						
Diisopropyl Ether (DIPE)	ND	0.50	µg/L						
1,4-Dioxane	ND	100	µg/L						
Ethylbenzene	ND	1.0	µg/L						
Hexachlorobutadiene	ND	1.0	µg/L						
2-Hexanone (MBK)	ND	10	µg/L						
Isopropylbenzene (Cumene)	ND	1.0	µg/L						
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L						
Methyl Acetate	ND	1.0	µg/L						



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
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Batch B205753 - SW-846 5030B

Blank (B205753-BLK1)									
Prepared: 06/14/18 Analyzed: 06/15/18									
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L						
Methyl Cyclohexane	ND	1.0	µg/L						
Methylene Chloride	ND	5.0	µg/L						
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L						
Naphthalene	ND	2.0	µg/L						V-05
n-Propylbenzene	ND	1.0	µg/L						
Styrene	ND	1.0	µg/L						
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L						
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L						
Tetrachloroethylene	ND	1.0	µg/L						
Tetrahydrofuran	ND	10	µg/L						
Toluene	ND	1.0	µg/L						
1,2,3-Trichlorobenzene	ND	5.0	µg/L						
1,2,4-Trichlorobenzene	ND	1.0	µg/L						
1,3,5-Trichlorobenzene	ND	1.0	µg/L						
1,1,1-Trichloroethane	ND	1.0	µg/L						
1,1,2-Trichloroethane	ND	1.0	µg/L						
Trichloroethylene	ND	1.0	µg/L						
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L						
1,2,3-Trichloropropane	ND	2.0	µg/L						
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L						
1,2,4-Trimethylbenzene	ND	1.0	µg/L						
1,3,5-Trimethylbenzene	ND	1.0	µg/L						
Vinyl Chloride	ND	2.0	µg/L						
m+p Xylene	ND	2.0	µg/L						
o-Xylene	ND	1.0	µg/L						
Surrogate: 1,2-Dichloroethane-d4	23.2		µg/L	25.0		92.8	70-130		
Surrogate: Toluene-d8	24.8		µg/L	25.0		99.2	70-130		
Surrogate: 4-Bromofluorobenzene	24.3		µg/L	25.0		97.2	70-130		

LCS (B205753-BS1)									
Prepared: 06/14/18 Analyzed: 06/15/18									
Acetone	183	50	µg/L	100	183 *	70-160			L-02 †
Acrylonitrile	11.3	5.0	µg/L	10.0	113	70-130			
tert-Amyl Methyl Ether (TAME)	10.5	0.50	µg/L	10.0	105	70-130			
Benzene	11.5	1.0	µg/L	10.0	115	70-130			
Bromobenzene	11.2	1.0	µg/L	10.0	112	70-130			
Bromochloromethane	13.2	1.0	µg/L	10.0	132 *	70-130			L-02
Bromodichloromethane	10.7	0.50	µg/L	10.0	107	70-130			
Bromoform	10.6	1.0	µg/L	10.0	106	70-130			
Bromomethane	6.81	2.0	µg/L	10.0	68.1	40-160			V-05 †
2-Butanone (MEK)	149	20	µg/L	100	149	40-160			†
tert-Butyl Alcohol (TBA)	105	20	µg/L	100	105	40-160			†
n-Butylbenzene	10.7	1.0	µg/L	10.0	107	70-130			
sec-Butylbenzene	10.1	1.0	µg/L	10.0	101	70-130			
tert-Butylbenzene	9.84	1.0	µg/L	10.0	98.4	70-130			
tert-Butyl Ethyl Ether (TBEE)	9.89	0.50	µg/L	10.0	98.9	70-130			
Carbon Disulfide	12.8	4.0	µg/L	10.0	128	70-130			
Carbon Tetrachloride	11.5	5.0	µg/L	10.0	115	70-130			
Chlorobenzene	11.0	1.0	µg/L	10.0	110	70-130			
Chlorodibromomethane	10.9	0.50	µg/L	10.0	109	70-130			
Chloroethane	10.6	2.0	µg/L	10.0	106	70-130			
Chloroform	11.4	2.0	µg/L	10.0	114	70-130			



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
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Batch B205753 - SW-846 5030B

LCS (B205753-BS1)					Prepared: 06/14/18 Analyzed: 06/15/18				
Chloromethane	8.91	2.0	µg/L	10.0	89.1	40-160			†
2-Chlorotoluene	10.6	1.0	µg/L	10.0	106	70-130			
4-Chlorotoluene	10.8	1.0	µg/L	10.0	108	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	8.36	5.0	µg/L	10.0	83.6	70-130			
1,2-Dibromoethane (EDB)	11.8	0.50	µg/L	10.0	118	70-130			
Dibromomethane	11.5	1.0	µg/L	10.0	115	70-130			
1,2-Dichlorobenzene	10.5	1.0	µg/L	10.0	105	70-130			
1,3-Dichlorobenzene	10.8	1.0	µg/L	10.0	108	70-130			
1,4-Dichlorobenzene	10.4	1.0	µg/L	10.0	104	70-130			
trans-1,4-Dichloro-2-butene	8.47	2.0	µg/L	10.0	84.7	70-130			
Dichlorodifluoromethane (Freon 12)	6.32	2.0	µg/L	10.0	63.2	40-160		V-34	†
1,1-Dichloroethane	11.5	1.0	µg/L	10.0	115	70-130			
1,2-Dichloroethane	10.7	1.0	µg/L	10.0	107	70-130			
1,1-Dichloroethylene	10.8	1.0	µg/L	10.0	108	70-130			
cis-1,2-Dichloroethylene	10.5	1.0	µg/L	10.0	105	70-130			
trans-1,2-Dichloroethylene	10.8	1.0	µg/L	10.0	108	70-130			
1,2-Dichloropropane	11.7	1.0	µg/L	10.0	117	70-130			
1,3-Dichloropropane	11.2	0.50	µg/L	10.0	112	70-130			
2,2-Dichloropropane	10.8	1.0	µg/L	10.0	108	40-130			†
1,1-Dichloropropene	11.4	2.0	µg/L	10.0	114	70-130			
cis-1,3-Dichloropropene	10.6	0.50	µg/L	10.0	106	70-130			
trans-1,3-Dichloropropene	10.8	0.50	µg/L	10.0	108	70-130			
Diethyl Ether	12.0	2.0	µg/L	10.0	120	70-130			
Diisopropyl Ether (DIPE)	9.53	0.50	µg/L	10.0	95.3	70-130			
1,4-Dioxane	108	100	µg/L	100	108	40-130			†
Ethylbenzene	11.2	1.0	µg/L	10.0	112	70-130			
Hexachlorobutadiene	12.9	1.0	µg/L	10.0	129	70-130			
2-Hexanone (MBK)	132	10	µg/L	100	132	70-160			†
Isopropylbenzene (Cumene)	11.2	1.0	µg/L	10.0	112	70-130			
p-Isopropyltoluene (p-Cymene)	10.4	1.0	µg/L	10.0	104	70-130			
Methyl Acetate	9.62	1.0	µg/L	10.0	96.2	70-130			
Methyl tert-Butyl Ether (MTBE)	10.8	1.0	µg/L	10.0	108	70-130			
Methyl Cyclohexane	11.2	1.0	µg/L	10.0	112	70-130			
Methylene Chloride	9.59	5.0	µg/L	10.0	95.9	70-130			
4-Methyl-2-pentanone (MIBK)	100	10	µg/L	100	100	70-160			†
Naphthalene	7.84	2.0	µg/L	10.0	78.4	40-130		V-05	†
n-Propylbenzene	10.8	1.0	µg/L	10.0	108	70-130			
Styrene	11.0	1.0	µg/L	10.0	110	70-130			
1,1,1,2-Tetrachloroethane	11.0	1.0	µg/L	10.0	110	70-130			
1,1,2,2-Tetrachloroethane	10.9	0.50	µg/L	10.0	109	70-130			
Tetrachloroethylene	12.7	1.0	µg/L	10.0	127	70-130			
Tetrahydrofuran	10.9	10	µg/L	10.0	109	70-130			
Toluene	11.4	1.0	µg/L	10.0	114	70-130			
1,2,3-Trichlorobenzene	9.41	5.0	µg/L	10.0	94.1	70-130			
1,2,4-Trichlorobenzene	9.42	1.0	µg/L	10.0	94.2	70-130			
1,3,5-Trichlorobenzene	10.9	1.0	µg/L	10.0	109	70-130			
1,1,1-Trichloroethane	10.9	1.0	µg/L	10.0	109	70-130			
1,1,2-Trichloroethane	11.5	1.0	µg/L	10.0	115	70-130			
Trichloroethylene	11.6	1.0	µg/L	10.0	116	70-130			
Trichlorofluoromethane (Freon 11)	9.30	2.0	µg/L	10.0	93.0	70-130			
1,2,3-Trichloropropane	10.9	2.0	µg/L	10.0	109	70-130			



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
Batch B205753 - SW-846 5030B									
LCS (B205753-BS1)									
Prepared: 06/14/18 Analyzed: 06/15/18									
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.5	1.0	µg/L	10.0	115	70-130			V-20
1,2,4-Trimethylbenzene	10.0	1.0	µg/L	10.0	100	70-130			
1,3,5-Trimethylbenzene	10.8	1.0	µg/L	10.0	108	70-130			
Vinyl Chloride	9.78	2.0	µg/L	10.0	97.8	40-160			†
m+p Xylene	22.0	2.0	µg/L	20.0	110	70-130			
o-Xylene	10.8	1.0	µg/L	10.0	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	22.8		µg/L	25.0	91.2	70-130			
Surrogate: Toluene-d8	25.4		µg/L	25.0	102	70-130			
Surrogate: 4-Bromofluorobenzene	26.2		µg/L	25.0	105	70-130			
LCS Dup (B205753-BSD1)									
Prepared: 06/14/18 Analyzed: 06/15/18									
Acetone	169	50	µg/L	100	169 *	70-160	8.34	25	L-02
Acrylonitrile	10.6	5.0	µg/L	10.0	106	70-130	6.38	25	
tert-Amyl Methyl Ether (TAME)	10.4	0.50	µg/L	10.0	104	70-130	0.863	25	
Benzene	11.1	1.0	µg/L	10.0	111	70-130	3.55	25	
Bromobenzene	10.6	1.0	µg/L	10.0	106	70-130	5.30	25	
Bromochloromethane	13.4	1.0	µg/L	10.0	134 *	70-130	1.80	25	L-02
Bromodichloromethane	10.7	0.50	µg/L	10.0	107	70-130	0.0932	25	
Bromoform	10.5	1.0	µg/L	10.0	105	70-130	0.854	25	
Bromomethane	7.61	2.0	µg/L	10.0	76.1	40-160	11.1	25	V-05
2-Butanone (MEK)	138	20	µg/L	100	138	40-160	8.14	25	†
tert-Butyl Alcohol (TBA)	106	20	µg/L	100	106	40-160	0.454	25	†
n-Butylbenzene	10.2	1.0	µg/L	10.0	102	70-130	4.79	25	
sec-Butylbenzene	9.34	1.0	µg/L	10.0	93.4	70-130	7.62	25	
tert-Butylbenzene	9.37	1.0	µg/L	10.0	93.7	70-130	4.89	25	
tert-Butyl Ethyl Ether (TBEE)	9.84	0.50	µg/L	10.0	98.4	70-130	0.507	25	
Carbon Disulfide	12.3	4.0	µg/L	10.0	123	70-130	4.30	25	
Carbon Tetrachloride	11.0	5.0	µg/L	10.0	110	70-130	4.54	25	
Chlorobenzene	10.7	1.0	µg/L	10.0	107	70-130	3.03	25	
Chlorodibromomethane	10.8	0.50	µg/L	10.0	108	70-130	0.643	25	
Chloroethane	9.84	2.0	µg/L	10.0	98.4	70-130	7.72	25	
Chloroform	11.2	2.0	µg/L	10.0	112	70-130	1.50	25	
Chloromethane	8.47	2.0	µg/L	10.0	84.7	40-160	5.06	25	†
2-Chlorotoluene	10.4	1.0	µg/L	10.0	104	70-130	1.81	25	
4-Chlorotoluene	10.5	1.0	µg/L	10.0	105	70-130	2.26	25	
1,2-Dibromo-3-chloropropane (DBCP)	8.35	5.0	µg/L	10.0	83.5	70-130	0.120	25	
1,2-Dibromoethane (EDB)	11.5	0.50	µg/L	10.0	115	70-130	3.01	25	
Dibromomethane	11.3	1.0	µg/L	10.0	113	70-130	2.28	25	
1,2-Dichlorobenzene	10.0	1.0	µg/L	10.0	100	70-130	4.38	25	
1,3-Dichlorobenzene	10.2	1.0	µg/L	10.0	102	70-130	5.99	25	
1,4-Dichlorobenzene	9.86	1.0	µg/L	10.0	98.6	70-130	5.14	25	
trans-1,4-Dichloro-2-butene	8.98	2.0	µg/L	10.0	89.8	70-130	5.85	25	
Dichlorodifluoromethane (Freon 12)	6.23	2.0	µg/L	10.0	62.3	40-160	1.43	25	V-34
1,1-Dichloroethane	11.2	1.0	µg/L	10.0	112	70-130	2.20	25	
1,2-Dichloroethane	10.6	1.0	µg/L	10.0	106	70-130	0.470	25	
1,1-Dichloroethylene	10.8	1.0	µg/L	10.0	108	70-130	0.926	25	
cis-1,2-Dichloroethylene	10.7	1.0	µg/L	10.0	107	70-130	1.41	25	
trans-1,2-Dichloroethylene	10.7	1.0	µg/L	10.0	107	70-130	1.12	25	
1,2-Dichloropropane	11.6	1.0	µg/L	10.0	116	70-130	1.12	25	
1,3-Dichloropropane	11.0	0.50	µg/L	10.0	110	70-130	1.81	25	
2,2-Dichloropropane	10.4	1.0	µg/L	10.0	104	40-130	4.24	25	†
1,1-Dichloropropene	11.0	2.0	µg/L	10.0	110	70-130	3.83	25	



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B205753 - SW-846 5030B

LCS Dup (B205753-BSD1)	Prepared: 06/14/18 Analyzed: 06/15/18								
cis-1,3-Dichloropropene	10.1	0.50	µg/L	10.0	101	70-130	4.35	25	
trans-1,3-Dichloropropene	10.6	0.50	µg/L	10.0	106	70-130	1.12	25	
Diethyl Ether	11.6	2.0	µg/L	10.0	116	70-130	2.79	25	
Diisopropyl Ether (DIPE)	9.39	0.50	µg/L	10.0	93.9	70-130	1.48	25	
1,4-Dioxane	111	100	µg/L	100	111	40-130	2.88	50	† ‡
Ethylbenzene	10.6	1.0	µg/L	10.0	106	70-130	4.86	25	
Hexachlorobutadiene	12.2	1.0	µg/L	10.0	122	70-130	5.66	25	
2-Hexanone (MBK)	121	10	µg/L	100	121	70-160	8.52	25	†
Isopropylbenzene (Cumene)	10.6	1.0	µg/L	10.0	106	70-130	5.78	25	
p-Isopropyltoluene (p-Cymene)	9.86	1.0	µg/L	10.0	98.6	70-130	4.95	25	
Methyl Acetate	9.97	1.0	µg/L	10.0	99.7	70-130	3.57	25	
Methyl tert-Butyl Ether (MTBE)	10.7	1.0	µg/L	10.0	107	70-130	1.21	25	
Methyl Cyclohexane	11.0	1.0	µg/L	10.0	110	70-130	2.26	25	
Methylene Chloride	9.40	5.0	µg/L	10.0	94.0	70-130	2.00	25	
4-Methyl-2-pentanone (MIBK)	99.9	10	µg/L	100	99.9	70-160	0.170	25	†
Naphthalene	7.86	2.0	µg/L	10.0	78.6	40-130	0.255	25	V-05
n-Propylbenzene	10.2	1.0	µg/L	10.0	102	70-130	5.23	25	
Styrene	10.6	1.0	µg/L	10.0	106	70-130	3.98	25	
1,1,1,2-Tetrachloroethane	10.8	1.0	µg/L	10.0	108	70-130	2.39	25	
1,1,2,2-Tetrachloroethane	10.4	0.50	µg/L	10.0	104	70-130	3.94	25	
Tetrachloroethylene	12.5	1.0	µg/L	10.0	125	70-130	1.66	25	
Tetrahydrofuran	10.8	10	µg/L	10.0	108	70-130	0.828	25	
Toluene	11.3	1.0	µg/L	10.0	113	70-130	1.23	25	
1,2,3-Trichlorobenzene	9.50	5.0	µg/L	10.0	95.0	70-130	0.952	25	
1,2,4-Trichlorobenzene	9.37	1.0	µg/L	10.0	93.7	70-130	0.532	25	
1,3,5-Trichlorobenzene	10.7	1.0	µg/L	10.0	107	70-130	1.20	25	
1,1,1-Trichloroethane	10.8	1.0	µg/L	10.0	108	70-130	1.47	25	
1,1,2-Trichloroethane	11.4	1.0	µg/L	10.0	114	70-130	1.14	25	
Trichloroethylene	11.3	1.0	µg/L	10.0	113	70-130	2.63	25	
Trichlorofluoromethane (Freon 11)	9.21	2.0	µg/L	10.0	92.1	70-130	0.972	25	
1,2,3-Trichloropropane	11.0	2.0	µg/L	10.0	110	70-130	0.549	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.1	1.0	µg/L	10.0	111	70-130	3.27	25	V-20
1,2,4-Trimethylbenzene	9.54	1.0	µg/L	10.0	95.4	70-130	4.91	25	
1,3,5-Trimethylbenzene	10.2	1.0	µg/L	10.0	102	70-130	5.89	25	
Vinyl Chloride	9.53	2.0	µg/L	10.0	95.3	40-160	2.59	25	†
m+p Xylene	21.2	2.0	µg/L	20.0	106	70-130	3.52	25	
o-Xylene	10.3	1.0	µg/L	10.0	103	70-130	4.28	25	
Surrogate: 1,2-Dichloroethane-d4	22.9		µg/L	25.0	91.7	70-130			
Surrogate: Toluene-d8	25.4		µg/L	25.0	102	70-130			
Surrogate: 4-Bromofluorobenzene	25.6		µg/L	25.0	102	70-130			

Batch B205833 - SW-846 5030B

Blank (B205833-BLK1)	Prepared: 06/15/18 Analyzed: 06/18/18							
Acetone	ND	50	µg/L					
Acrylonitrile	ND	5.0	µg/L					
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L					
Benzene	ND	1.0	µg/L					
Bromobenzene	ND	1.0	µg/L					
Bromochloromethane	ND	1.0	µg/L					V-35
Bromodichloromethane	ND	0.50	µg/L					
Bromoform	ND	1.0	µg/L					

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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B205833 - SW-846 5030B

Blank (B205833-BLK1)										Prepared: 06/15/18 Analyzed: 06/18/18
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	4.0	µg/L							V-05
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							V-05
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							V-35
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl Acetate	ND	1.0	µg/L							L-04
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Methyl Cyclohexane	ND	1.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
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Batch B205833 - SW-846 5030B

Blank (B205833-BLK1)									
Prepared: 06/15/18 Analyzed: 06/18/18									
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L						
Tetrachloroethylene	ND	1.0	µg/L						
Tetrahydrofuran	ND	10	µg/L						
Toluene	ND	1.0	µg/L						
1,2,3-Trichlorobenzene	ND	5.0	µg/L						
1,2,4-Trichlorobenzene	ND	1.0	µg/L						
1,3,5-Trichlorobenzene	ND	1.0	µg/L						
1,1,1-Trichloroethane	ND	1.0	µg/L						
1,1,2-Trichloroethane	ND	1.0	µg/L						
Trichloroethylene	ND	1.0	µg/L						
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L						
1,2,3-Trichloropropane	ND	2.0	µg/L						
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L						
1,2,4-Trimethylbenzene	ND	1.0	µg/L						
1,3,5-Trimethylbenzene	ND	1.0	µg/L						
Vinyl Chloride	ND	2.0	µg/L						
m+p Xylene	ND	2.0	µg/L						
o-Xylene	ND	1.0	µg/L						
Surrogate: 1,2-Dichloroethane-d4	23.0		µg/L	25.0		92.1	70-130		
Surrogate: Toluene-d8	24.7		µg/L	25.0		98.9	70-130		
Surrogate: 4-Bromofluorobenzene	23.9		µg/L	25.0		95.6	70-130		

LCS (B205833-BS1)									
Prepared: 06/15/18 Analyzed: 06/18/18									
Acetone	102	50	µg/L	100		102	70-160		†
Acrylonitrile	11.8	5.0	µg/L	10.0		118	70-130		
tert-Amyl Methyl Ether (TAME)	9.79	0.50	µg/L	10.0		97.9	70-130		
Benzene	10.4	1.0	µg/L	10.0		104	70-130		
Bromobenzene	11.0	1.0	µg/L	10.0		110	70-130		
Bromochloromethane	12.6	1.0	µg/L	10.0		126	70-130		V-35
Bromodichloromethane	10.5	0.50	µg/L	10.0		105	70-130		
Bromoform	10.8	1.0	µg/L	10.0		108	70-130		
Bromomethane	8.63	2.0	µg/L	10.0		86.3	40-160		V-20 †
2-Butanone (MEK)	109	20	µg/L	100		109	40-160		†
tert-Butyl Alcohol (TBA)	106	20	µg/L	100		106	40-160		†
n-Butylbenzene	11.1	1.0	µg/L	10.0		111	70-130		
sec-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130		
tert-Butylbenzene	11.0	1.0	µg/L	10.0		110	70-130		
tert-Butyl Ethyl Ether (TBEE)	9.75	0.50	µg/L	10.0		97.5	70-130		
Carbon Disulfide	10.0	4.0	µg/L	10.0		100	70-130		V-05
Carbon Tetrachloride	9.48	5.0	µg/L	10.0		94.8	70-130		
Chlorobenzene	11.2	1.0	µg/L	10.0		112	70-130		
Chlorodibromomethane	11.1	0.50	µg/L	10.0		111	70-130		
Chloroethane	9.21	2.0	µg/L	10.0		92.1	70-130		
Chloroform	10.3	2.0	µg/L	10.0		103	70-130		
Chloromethane	9.94	2.0	µg/L	10.0		99.4	40-160		†
2-Chlorotoluene	10.8	1.0	µg/L	10.0		108	70-130		
4-Chlorotoluene	10.7	1.0	µg/L	10.0		107	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	10.2	5.0	µg/L	10.0		102	70-130		
1,2-Dibromoethane (EDB)	10.9	0.50	µg/L	10.0		109	70-130		
Dibromomethane	11.1	1.0	µg/L	10.0		111	70-130		
1,2-Dichlorobenzene	10.8	1.0	µg/L	10.0		108	70-130		
1,3-Dichlorobenzene	11.1	1.0	µg/L	10.0		111	70-130		



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
Batch B205833 - SW-846 5030B									
LCS (B205833-BS1)									
Prepared: 06/15/18 Analyzed: 06/18/18									
1,4-Dichlorobenzene	10.4	1.0	µg/L	10.0	104	70-130			
trans-1,4-Dichloro-2-butene	10.2	2.0	µg/L	10.0	102	70-130			
Dichlorodifluoromethane (Freon 12)	8.08	2.0	µg/L	10.0	80.8	40-160		V-05	†
1,1-Dichloroethane	10.8	1.0	µg/L	10.0	108	70-130			
1,2-Dichloroethane	9.95	1.0	µg/L	10.0	99.5	70-130			
1,1-Dichloroethylene	9.58	1.0	µg/L	10.0	95.8	70-130			
cis-1,2-Dichloroethylene	10.3	1.0	µg/L	10.0	103	70-130			
trans-1,2-Dichloroethylene	10.8	1.0	µg/L	10.0	108	70-130			
1,2-Dichloropropane	11.2	1.0	µg/L	10.0	112	70-130			
1,3-Dichloropropane	10.1	0.50	µg/L	10.0	101	70-130			
2,2-Dichloropropane	10.7	1.0	µg/L	10.0	107	40-130			†
1,1-Dichloropropene	9.81	2.0	µg/L	10.0	98.1	70-130			
cis-1,3-Dichloropropene	10.6	0.50	µg/L	10.0	106	70-130			
trans-1,3-Dichloropropene	10.7	0.50	µg/L	10.0	107	70-130			
Diethyl Ether	10.6	2.0	µg/L	10.0	106	70-130			
Diisopropyl Ether (DIPE)	10.1	0.50	µg/L	10.0	101	70-130			
1,4-Dioxane	105	50	µg/L	100	105	40-130			†
Ethylbenzene	11.2	1.0	µg/L	10.0	112	70-130			
Hexachlorobutadiene	12.7	0.60	µg/L	10.0	127	70-130		V-35, V-20	
2-Hexanone (MBK)	108	10	µg/L	100	108	70-160			†
Isopropylbenzene (Cumene)	11.7	1.0	µg/L	10.0	117	70-130			
p-Isopropyltoluene (p-Cymene)	11.2	1.0	µg/L	10.0	112	70-130			
Methyl Acetate	31.4	1.0	µg/L	50.0	62.8 *	70-130		L-04	
Methyl tert-Butyl Ether (MTBE)	10.7	1.0	µg/L	10.0	107	70-130			
Methyl Cyclohexane	10.8	1.0	µg/L	10.0	108	70-130			
Methylene Chloride	9.61	5.0	µg/L	10.0	96.1	70-130			
4-Methyl-2-pentanone (MIBK)	110	10	µg/L	100	110	70-160			†
Naphthalene	10.6	2.0	µg/L	10.0	106	40-130			†
n-Propylbenzene	10.8	1.0	µg/L	10.0	108	70-130			
Styrene	11.4	1.0	µg/L	10.0	114	70-130			
1,1,1,2-Tetrachloroethane	11.2	1.0	µg/L	10.0	112	70-130			
1,1,2,2-Tetrachloroethane	11.0	0.50	µg/L	10.0	110	70-130			
Tetrachloroethylene	11.0	1.0	µg/L	10.0	110	70-130			
Tetrahydrofuran	11.7	10	µg/L	10.0	117	70-130			
Toluene	10.5	1.0	µg/L	10.0	105	70-130			
1,2,3-Trichlorobenzene	11.1	5.0	µg/L	10.0	111	70-130			
1,2,4-Trichlorobenzene	10.7	1.0	µg/L	10.0	107	70-130			
1,3,5-Trichlorobenzene	11.0	1.0	µg/L	10.0	110	70-130			
1,1,1-Trichloroethane	9.66	1.0	µg/L	10.0	96.6	70-130			
1,1,2-Trichloroethane	11.0	1.0	µg/L	10.0	110	70-130			
Trichloroethylene	10.9	1.0	µg/L	10.0	109	70-130			
Trichlorofluoromethane (Freon 11)	8.13	2.0	µg/L	10.0	81.3	70-130			
1,2,3-Trichloropropane	8.42	2.0	µg/L	10.0	84.2	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.84	1.0	µg/L	10.0	98.4	70-130			
1,2,4-Trimethylbenzene	10.4	1.0	µg/L	10.0	104	70-130			
1,3,5-Trimethylbenzene	10.8	1.0	µg/L	10.0	108	70-130			
Vinyl Chloride	9.55	2.0	µg/L	10.0	95.5	40-160			†
m+p Xylene	21.6	2.0	µg/L	20.0	108	70-130			
o-Xylene	10.8	1.0	µg/L	10.0	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	22.2		µg/L	25.0	88.9	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0	98.3	70-130			



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
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Batch B205833 - SW-846 5030B

LCS (B205833-BS1) Prepared: 06/15/18 Analyzed: 06/18/18									
Surrogate: 4-Bromofluorobenzene	25.2		µg/L	25.0	101	70-130			
LCS Dup (B205833-BS1) Prepared: 06/15/18 Analyzed: 06/18/18									
Acetone	106	50	µg/L	100	106	70-160	4.35	25	†
Acrylonitrile	11.9	5.0	µg/L	10.0	119	70-130	1.18	25	
tert-Amyl Methyl Ether (TAME)	9.93	0.50	µg/L	10.0	99.3	70-130	1.42	25	
Benzene	10.7	1.0	µg/L	10.0	107	70-130	3.42	25	
Bromobenzene	10.9	1.0	µg/L	10.0	109	70-130	0.825	25	
Bromoform	12.8	1.0	µg/L	10.0	128	70-130	1.18	25	V-35
Bromochloromethane	10.2	0.50	µg/L	10.0	102	70-130	2.51	25	
Bromoform	10.9	1.0	µg/L	10.0	109	70-130	1.20	25	
Bromomethane	9.45	2.0	µg/L	10.0	94.5	40-160	9.07	25	V-20 †
2-Butanone (MEK)	114	20	µg/L	100	114	40-160	3.77	25	†
tert-Butyl Alcohol (TBA)	111	20	µg/L	100	111	40-160	5.13	25	†
n-Butylbenzene	11.6	1.0	µg/L	10.0	116	70-130	4.05	25	
sec-Butylbenzene	11.2	1.0	µg/L	10.0	112	70-130	1.89	25	
tert-Butylbenzene	11.2	1.0	µg/L	10.0	112	70-130	1.54	25	
tert-Butyl Ethyl Ether (TBEE)	10.0	0.50	µg/L	10.0	100	70-130	2.73	25	
Carbon Disulfide	10.0	4.0	µg/L	10.0	100	70-130	0.0997	25	V-05
Carbon Tetrachloride	9.70	5.0	µg/L	10.0	97.0	70-130	2.29	25	
Chlorobenzene	11.0	1.0	µg/L	10.0	110	70-130	2.16	25	
Chlorodibromomethane	10.6	0.50	µg/L	10.0	106	70-130	4.42	25	
Chloroethane	9.68	2.0	µg/L	10.0	96.8	70-130	4.98	25	
Chloroform	10.6	2.0	µg/L	10.0	106	70-130	3.54	25	
Chloromethane	10.4	2.0	µg/L	10.0	104	40-160	4.62	25	†
2-Chlorotoluene	10.6	1.0	µg/L	10.0	106	70-130	1.68	25	
4-Chlorotoluene	10.7	1.0	µg/L	10.0	107	70-130	0.654	25	
1,2-Dibromo-3-chloropropane (DBCP)	10.1	5.0	µg/L	10.0	101	70-130	0.295	25	
1,2-Dibromoethane (EDB)	10.5	0.50	µg/L	10.0	105	70-130	4.30	25	
Dibromomethane	10.8	1.0	µg/L	10.0	108	70-130	2.38	25	
1,2-Dichlorobenzene	11.1	1.0	µg/L	10.0	111	70-130	2.82	25	
1,3-Dichlorobenzene	11.3	1.0	µg/L	10.0	113	70-130	2.05	25	
1,4-Dichlorobenzene	10.6	1.0	µg/L	10.0	106	70-130	2.29	25	
trans-1,4-Dichloro-2-butene	10.1	2.0	µg/L	10.0	101	70-130	1.18	25	
Dichlorodifluoromethane (Freon 12)	7.82	2.0	µg/L	10.0	78.2	40-160	3.27	25	V-05 †
1,1-Dichloroethane	11.2	1.0	µg/L	10.0	112	70-130	3.36	25	
1,2-Dichloroethane	9.80	1.0	µg/L	10.0	98.0	70-130	1.52	25	
1,1-Dichloroethylene	9.92	1.0	µg/L	10.0	99.2	70-130	3.49	25	
cis-1,2-Dichloroethylene	10.9	1.0	µg/L	10.0	109	70-130	5.84	25	
trans-1,2-Dichloroethylene	11.3	1.0	µg/L	10.0	113	70-130	4.90	25	
1,2-Dichloropropane	11.5	1.0	µg/L	10.0	115	70-130	3.08	25	
1,3-Dichloropropane	9.91	0.50	µg/L	10.0	99.1	70-130	2.00	25	
2,2-Dichloropropane	10.9	1.0	µg/L	10.0	109	40-130	1.30	25	†
1,1-Dichloropropene	9.98	2.0	µg/L	10.0	99.8	70-130	1.72	25	
cis-1,3-Dichloropropene	10.4	0.50	µg/L	10.0	104	70-130	1.52	25	
trans-1,3-Dichloropropene	10.5	0.50	µg/L	10.0	105	70-130	1.42	25	
Diethyl Ether	10.7	2.0	µg/L	10.0	107	70-130	0.468	25	
Diisopropyl Ether (DIPE)	10.6	0.50	µg/L	10.0	106	70-130	4.36	25	
1,4-Dioxane	109	50	µg/L	100	109	40-130	3.45	50	† ‡
Ethylbenzene	11.2	1.0	µg/L	10.0	112	70-130	0.00	25	
Hexachlorobutadiene	12.7	0.60	µg/L	10.0	127	70-130	0.236	25	V-20, V-35
2-Hexanone (MBK)	110	10	µg/L	100	110	70-160	1.52	25	†



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B205833 - SW-846 5030B

LCS Dup (B205833-BSD1)										
Prepared: 06/15/18 Analyzed: 06/18/18										
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Isopropylbenzene (Cumene)	11.6	1.0	µg/L	10.0	116	70-130	0.429	25		
p-Isopropyltoluene (p-Cymene)	11.4	1.0	µg/L	10.0	114	70-130	2.03	25		
Methyl Acetate	32.7	1.0	µg/L	50.0	65.4 *	70-130	4.09	25	L-04	
Methyl tert-Butyl Ether (MTBE)	10.9	1.0	µg/L	10.0	109	70-130	2.13	25		
Methyl Cyclohexane	10.6	1.0	µg/L	10.0	106	70-130	1.31	25		
Methylene Chloride	9.99	5.0	µg/L	10.0	99.9	70-130	3.88	25		
4-Methyl-2-pentanone (MIBK)	112	10	µg/L	100	112	70-160	1.24	25		†
Naphthalene	11.2	2.0	µg/L	10.0	112	40-130	5.53	25		†
n-Propylbenzene	10.9	1.0	µg/L	10.0	109	70-130	0.368	25		
Styrene	11.3	1.0	µg/L	10.0	113	70-130	1.06	25		
1,1,1,2-Tetrachloroethane	11.2	1.0	µg/L	10.0	112	70-130	0.714	25		
1,1,2,2-Tetrachloroethane	11.1	0.50	µg/L	10.0	111	70-130	0.905	25		
Tetrachloroethylene	11.2	1.0	µg/L	10.0	112	70-130	0.991	25		
Tetrahydrofuran	12.3	10	µg/L	10.0	123	70-130	5.67	25		
Toluene	10.7	1.0	µg/L	10.0	107	70-130	1.79	25		
1,2,3-Trichlorobenzene	11.2	5.0	µg/L	10.0	112	70-130	1.43	25		
1,2,4-Trichlorobenzene	11.0	1.0	µg/L	10.0	110	70-130	2.67	25		
1,3,5-Trichlorobenzene	11.2	1.0	µg/L	10.0	112	70-130	1.89	25		
1,1,1-Trichloroethane	10.3	1.0	µg/L	10.0	103	70-130	6.51	25		
1,1,2-Trichloroethane	11.2	1.0	µg/L	10.0	112	70-130	1.71	25		
Trichloroethylene	11.4	1.0	µg/L	10.0	114	70-130	3.85	25		
Trichlorofluoromethane (Freon 11)	8.41	2.0	µg/L	10.0	84.1	70-130	3.39	25		
1,2,3-Trichloropropane	8.92	2.0	µg/L	10.0	89.2	70-130	5.77	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.60	1.0	µg/L	10.0	96.0	70-130	2.47	25		
1,2,4-Trimethylbenzene	10.7	1.0	µg/L	10.0	107	70-130	2.76	25		
1,3,5-Trimethylbenzene	10.8	1.0	µg/L	10.0	108	70-130	0.185	25		
Vinyl Chloride	9.89	2.0	µg/L	10.0	98.9	40-160	3.50	25		†
m+p Xylene	21.9	2.0	µg/L	20.0	110	70-130	1.38	25		
o-Xylene	10.8	1.0	µg/L	10.0	108	70-130	0.277	25		
Surrogate: 1,2-Dichloroethane-d4	22.9		µg/L	25.0	91.7	70-130				
Surrogate: Toluene-d8	24.3		µg/L	25.0	97.3	70-130				
Surrogate: 4-Bromofluorobenzene	24.9		µg/L	25.0	99.4	70-130				

Batch B205838 - SW-846 5035

Blank (B205838-BLK1)									
Prepared & Analyzed: 06/15/18									
Acetone	ND	0.10	mg/Kg wet						
Acrylonitrile	ND	0.0060	mg/Kg wet						
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet						
Benzene	ND	0.0020	mg/Kg wet						
Bromobenzene	ND	0.0020	mg/Kg wet						
Bromochloromethane	ND	0.0020	mg/Kg wet						
Bromodichloromethane	ND	0.0020	mg/Kg wet						
Bromoform	ND	0.0020	mg/Kg wet						
Bromomethane	ND	0.010	mg/Kg wet						V-34
2-Butanone (MEK)	ND	0.040	mg/Kg wet						
tert-Butyl Alcohol (TBA)	ND	0.040	mg/Kg wet						
n-Butylbenzene	ND	0.0020	mg/Kg wet						
sec-Butylbenzene	ND	0.0020	mg/Kg wet						
tert-Butylbenzene	ND	0.0020	mg/Kg wet						
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet						
Carbon Disulfide	ND	0.0060	mg/Kg wet						



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B205838 - SW-846 5035

Blank (B205838-BLK1)										Prepared & Analyzed: 06/15/18
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.020	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
trans-1,4-Dichloro-2-butene	ND	0.0040	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg wet							V-05, V-34
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.020	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl Acetate	ND	0.0020	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methyl Cyclohexane	ND	0.0020	mg/Kg wet							
Methylene Chloride	ND	0.020	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.0040	mg/Kg wet							
n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
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Batch B205838 - SW-846 5035

Blank (B205838-BLK1)	Prepared & Analyzed: 06/15/18								
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet						
Trichloroethylene	ND	0.0020	mg/Kg wet						
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet						
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet						
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.010	mg/Kg wet						
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet						
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet						
Vinyl Chloride	ND	0.010	mg/Kg wet						
m+p Xylene	ND	0.0040	mg/Kg wet						
o-Xylene	ND	0.0020	mg/Kg wet						
Surrogate: 1,2-Dichloroethane-d4	0.0480		mg/Kg wet	0.0500	96.1	70-130			
Surrogate: Toluene-d8	0.0497		mg/Kg wet	0.0500	99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.0482		mg/Kg wet	0.0500	96.5	70-130			
LCS (B205838-BS1)	Prepared & Analyzed: 06/15/18								
Acetone	0.232	0.10	mg/Kg wet	0.200	116	70-160			†
Acrylonitrile	0.0181	0.0060	mg/Kg wet	0.0200	90.7	70-130			
tert-Amyl Methyl Ether (TAME)	0.0172	0.0010	mg/Kg wet	0.0200	86.1	70-130			
Benzene	0.0175	0.0020	mg/Kg wet	0.0200	87.5	70-130			
Bromobenzene	0.0175	0.0020	mg/Kg wet	0.0200	87.5	70-130			
Bromoform	0.0191	0.0020	mg/Kg wet	0.0200	95.6	70-130			
Bromochloromethane	0.0193	0.0020	mg/Kg wet	0.0200	96.4	70-130			
Bromodichloromethane	0.0222	0.0020	mg/Kg wet	0.0200	111	70-130			
Bromomethane	0.0124	0.010	mg/Kg wet	0.0200	62.0	40-130		V-34	†
2-Butanone (MEK)	0.223	0.040	mg/Kg wet	0.200	111	70-160			†
tert-Butyl Alcohol (TBA)	0.187	0.040	mg/Kg wet	0.200	93.5	40-130			†
n-Butylbenzene	0.0172	0.0020	mg/Kg wet	0.0200	86.2	70-130			
sec-Butylbenzene	0.0176	0.0020	mg/Kg wet	0.0200	88.2	70-130			
tert-Butylbenzene	0.0176	0.0020	mg/Kg wet	0.0200	87.8	70-160			†
tert-Butyl Ethyl Ether (TBEE)	0.0178	0.0010	mg/Kg wet	0.0200	88.9	70-130			
Carbon Disulfide	0.0209	0.0060	mg/Kg wet	0.0200	104	70-130			
Carbon Tetrachloride	0.0185	0.0020	mg/Kg wet	0.0200	92.6	70-130			
Chlorobenzene	0.0190	0.0020	mg/Kg wet	0.0200	95.2	70-130			
Chlorodibromomethane	0.0194	0.0010	mg/Kg wet	0.0200	96.8	70-130			
Chloroethane	0.0211	0.020	mg/Kg wet	0.0200	106	70-130			
Chloroform	0.0187	0.0040	mg/Kg wet	0.0200	93.3	70-130			
Chloromethane	0.0192	0.010	mg/Kg wet	0.0200	96.1	70-130			
2-Chlorotoluene	0.0176	0.0020	mg/Kg wet	0.0200	87.9	70-130			
4-Chlorotoluene	0.0177	0.0020	mg/Kg wet	0.0200	88.5	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	0.0180	0.0020	mg/Kg wet	0.0200	90.1	70-130			
1,2-Dibromoethane (EDB)	0.0199	0.0010	mg/Kg wet	0.0200	99.5	70-130			
Dibromomethane	0.0207	0.0020	mg/Kg wet	0.0200	103	70-130			
1,2-Dichlorobenzene	0.0193	0.0020	mg/Kg wet	0.0200	96.6	70-130			
1,3-Dichlorobenzene	0.0187	0.0020	mg/Kg wet	0.0200	93.7	70-130			
1,4-Dichlorobenzene	0.0178	0.0020	mg/Kg wet	0.0200	89.0	70-130			
trans-1,4-Dichloro-2-butene	0.0200	0.0040	mg/Kg wet	0.0200	99.8	70-130			
Dichlorodifluoromethane (Freon 12)	0.0150	0.020	mg/Kg wet	0.0200	75.2	40-160		V-05, V-34	†
1,1-Dichloroethane	0.0184	0.0020	mg/Kg wet	0.0200	92.2	70-130			
1,2-Dichloroethane	0.0198	0.0020	mg/Kg wet	0.0200	99.0	70-130			
1,1-Dichloroethylene	0.0201	0.0040	mg/Kg wet	0.0200	100	70-130			
cis-1,2-Dichloroethylene	0.0190	0.0020	mg/Kg wet	0.0200	95.1	70-130			
trans-1,2-Dichloroethylene	0.0182	0.0020	mg/Kg wet	0.0200	91.2	70-130			



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
Batch B205838 - SW-846 5035									
LCS (B205838-BS1)									
Prepared & Analyzed: 06/15/18									
1,2-Dichloropropane	0.0203	0.0020	mg/Kg wet	0.0200	101	70-130			
1,3-Dichloropropane	0.0179	0.0010	mg/Kg wet	0.0200	89.5	70-130			
2,2-Dichloropropane	0.0176	0.0020	mg/Kg wet	0.0200	88.2	70-130			
1,1-Dichloropropene	0.0175	0.0020	mg/Kg wet	0.0200	87.5	70-130			
cis-1,3-Dichloropropene	0.0185	0.0010	mg/Kg wet	0.0200	92.3	70-130			
trans-1,3-Dichloropropene	0.0199	0.0010	mg/Kg wet	0.0200	99.5	70-130			
Diethyl Ether	0.0207	0.020	mg/Kg wet	0.0200	103	70-130			
Diisopropyl Ether (DIPE)	0.0176	0.0010	mg/Kg wet	0.0200	88.2	70-130			
1,4-Dioxane	0.172	0.10	mg/Kg wet	0.200	85.8	40-160			†
Ethylbenzene	0.0184	0.0020	mg/Kg wet	0.0200	92.0	70-130			
Hexachlorobutadiene	0.0216	0.0020	mg/Kg wet	0.0200	108	70-160			
2-Hexanone (MBK)	0.224	0.020	mg/Kg wet	0.200	112	70-160			†
Isopropylbenzene (Cumene)	0.0201	0.0020	mg/Kg wet	0.0200	100	70-130			
p-Isopropyltoluene (p-Cymene)	0.0182	0.0020	mg/Kg wet	0.0200	90.8	70-130			
Methyl Acetate	0.0208	0.0020	mg/Kg wet	0.0200	104	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0187	0.0040	mg/Kg wet	0.0200	93.5	70-130			
Methyl Cyclohexane	0.0185	0.0020	mg/Kg wet	0.0200	92.4	70-130			
Methylene Chloride	0.0183	0.020	mg/Kg wet	0.0200	91.3	40-160			
4-Methyl-2-pentanone (MIBK)	0.223	0.020	mg/Kg wet	0.200	111	70-160			†
Naphthalene	0.0188	0.0040	mg/Kg wet	0.0200	94.2	40-130			†
n-Propylbenzene	0.0181	0.0020	mg/Kg wet	0.0200	90.4	70-130			
Styrene	0.0187	0.0020	mg/Kg wet	0.0200	93.5	70-130			
1,1,1,2-Tetrachloroethane	0.0202	0.0020	mg/Kg wet	0.0200	101	70-130			
1,1,2,2-Tetrachloroethane	0.0190	0.0010	mg/Kg wet	0.0200	94.8	70-130			
Tetrachloroethylene	0.0209	0.0020	mg/Kg wet	0.0200	104	70-130			
Tetrahydrofuran	0.0199	0.010	mg/Kg wet	0.0200	99.4	70-130			
Toluene	0.0179	0.0020	mg/Kg wet	0.0200	89.6	70-130			
1,2,3-Trichlorobenzene	0.0205	0.0020	mg/Kg wet	0.0200	102	70-130			
1,2,4-Trichlorobenzene	0.0202	0.0020	mg/Kg wet	0.0200	101	70-130			
1,3,5-Trichlorobenzene	0.0200	0.0020	mg/Kg wet	0.0200	100	70-130			
1,1,1-Trichloroethane	0.0173	0.0020	mg/Kg wet	0.0200	86.4	70-130			
1,1,2-Trichloroethane	0.0183	0.0020	mg/Kg wet	0.0200	91.7	70-130			
Trichloroethylene	0.0177	0.0020	mg/Kg wet	0.0200	88.5	70-130			
Trichlorofluoromethane (Freon 11)	0.0180	0.010	mg/Kg wet	0.0200	89.9	70-130			
1,2,3-Trichloropropane	0.0190	0.0020	mg/Kg wet	0.0200	95.2	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0196	0.010	mg/Kg wet	0.0200	97.8	70-130			
1,2,4-Trimethylbenzene	0.0173	0.0020	mg/Kg wet	0.0200	86.3	70-130			
1,3,5-Trimethylbenzene	0.0182	0.0020	mg/Kg wet	0.0200	90.9	70-130			
Vinyl Chloride	0.0176	0.010	mg/Kg wet	0.0200	87.9	40-130			†
m+p Xylene	0.0356	0.0040	mg/Kg wet	0.0400	89.0	70-130			
o-Xylene	0.0176	0.0020	mg/Kg wet	0.0200	87.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0484		mg/Kg wet	0.0500	96.9	70-130			
Surrogate: Toluene-d8	0.0502		mg/Kg wet	0.0500	100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0502		mg/Kg wet	0.0500	100	70-130			

QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B205838 - SW-846 5035										
LCS Dup (B205838-BSD1)										
Prepared & Analyzed: 06/15/18										
Acetone	0.228	0.10	mg/Kg wet	0.200	114	70-160	1.64	25		†
Acrylonitrile	0.0176	0.0060	mg/Kg wet	0.0200	88.1	70-130	2.91	25		
tert-Amyl Methyl Ether (TAME)	0.0172	0.0010	mg/Kg wet	0.0200	85.9	70-130	0.233	25		
Benzene	0.0173	0.0020	mg/Kg wet	0.0200	86.5	70-130	1.15	25		
Bromobenzene	0.0179	0.0020	mg/Kg wet	0.0200	89.4	70-130	2.15	25		
Bromoform	0.0203	0.0020	mg/Kg wet	0.0200	102	70-130	5.99	25		
Bromochloromethane	0.0186	0.0020	mg/Kg wet	0.0200	93.2	70-130	3.38	25		
Bromodichloromethane	0.0208	0.0020	mg/Kg wet	0.0200	104	70-130	6.52	25		
Bromomethane	0.0147	0.010	mg/Kg wet	0.0200	73.5	40-130	17.0	25	V-34	†
2-Butanone (MEK)	0.210	0.040	mg/Kg wet	0.200	105	70-160	6.07	25		†
tert-Butyl Alcohol (TBA)	0.177	0.040	mg/Kg wet	0.200	88.4	40-130	5.71	25		†
n-Butylbenzene	0.0173	0.0020	mg/Kg wet	0.0200	86.7	70-130	0.578	25		
sec-Butylbenzene	0.0182	0.0020	mg/Kg wet	0.0200	90.9	70-130	3.02	25		
tert-Butylbenzene	0.0169	0.0020	mg/Kg wet	0.0200	84.4	70-160	3.95	25		†
tert-Butyl Ethyl Ether (TBEE)	0.0177	0.0010	mg/Kg wet	0.0200	88.4	70-130	0.564	25		
Carbon Disulfide	0.0202	0.0060	mg/Kg wet	0.0200	101	70-130	3.11	25		
Carbon Tetrachloride	0.0191	0.0020	mg/Kg wet	0.0200	95.4	70-130	2.98	25		
Chlorobenzene	0.0184	0.0020	mg/Kg wet	0.0200	91.9	70-130	3.53	25		
Chlorodibromomethane	0.0194	0.0010	mg/Kg wet	0.0200	96.9	70-130	0.103	25		
Chloroethane	0.0211	0.020	mg/Kg wet	0.0200	106	70-130	0.0947	25		
Chloroform	0.0181	0.0040	mg/Kg wet	0.0200	90.6	70-130	2.94	25		
Chloromethane	0.0185	0.010	mg/Kg wet	0.0200	92.4	70-130	3.93	25		
2-Chlorotoluene	0.0173	0.0020	mg/Kg wet	0.0200	86.4	70-130	1.72	25		
4-Chlorotoluene	0.0174	0.0020	mg/Kg wet	0.0200	87.1	70-130	1.59	25		
1,2-Dibromo-3-chloropropane (DBCP)	0.0183	0.0020	mg/Kg wet	0.0200	91.3	70-130	1.32	25		
1,2-Dibromoethane (EDB)	0.0193	0.0010	mg/Kg wet	0.0200	96.4	70-130	3.16	25		
Dibromomethane	0.0206	0.0020	mg/Kg wet	0.0200	103	70-130	0.291	25		
1,2-Dichlorobenzene	0.0182	0.0020	mg/Kg wet	0.0200	91.1	70-130	5.86	25		
1,3-Dichlorobenzene	0.0179	0.0020	mg/Kg wet	0.0200	89.7	70-130	4.36	25		
1,4-Dichlorobenzene	0.0172	0.0020	mg/Kg wet	0.0200	85.8	70-130	3.66	25		
trans-1,4-Dichloro-2-butene	0.0185	0.0040	mg/Kg wet	0.0200	92.7	70-130	7.38	25		
Dichlorodifluoromethane (Freon 12)	0.0155	0.020	mg/Kg wet	0.0200	77.6	40-160	3.14	25	V-05, V-34	†
1,1-Dichloroethane	0.0191	0.0020	mg/Kg wet	0.0200	95.3	70-130	3.31	25		
1,2-Dichloroethane	0.0198	0.0020	mg/Kg wet	0.0200	99.0	70-130	0.00	25		
1,1-Dichloroethylene	0.0201	0.0040	mg/Kg wet	0.0200	101	70-130	0.398	25		
cis-1,2-Dichloroethylene	0.0188	0.0020	mg/Kg wet	0.0200	94.2	70-130	0.951	25		
trans-1,2-Dichloroethylene	0.0179	0.0020	mg/Kg wet	0.0200	89.5	70-130	1.88	25		
1,2-Dichloropropane	0.0202	0.0020	mg/Kg wet	0.0200	101	70-130	0.494	25		
1,3-Dichloropropane	0.0179	0.0010	mg/Kg wet	0.0200	89.7	70-130	0.223	25		
2,2-Dichloropropane	0.0170	0.0020	mg/Kg wet	0.0200	85.2	70-130	3.46	25		
1,1-Dichloropropene	0.0174	0.0020	mg/Kg wet	0.0200	86.8	70-130	0.803	25		
cis-1,3-Dichloropropene	0.0171	0.0010	mg/Kg wet	0.0200	85.4	70-130	7.77	25		
trans-1,3-Dichloropropene	0.0180	0.0010	mg/Kg wet	0.0200	89.8	70-130	10.2	25		
Diethyl Ether	0.0185	0.020	mg/Kg wet	0.0200	92.7	70-130	10.9	25		
Diisopropyl Ether (DIPE)	0.0172	0.0010	mg/Kg wet	0.0200	86.0	70-130	2.53	25		
1,4-Dioxane	0.155	0.10	mg/Kg wet	0.200	77.4	40-160	10.3	50		† ‡
Ethylbenzene	0.0182	0.0020	mg/Kg wet	0.0200	90.8	70-130	1.31	25		
Hexachlorobutadiene	0.0205	0.0020	mg/Kg wet	0.0200	103	70-160	5.03	25		
2-Hexanone (MBK)	0.206	0.020	mg/Kg wet	0.200	103	70-160	8.14	25		†
Isopropylbenzene (Cumene)	0.0191	0.0020	mg/Kg wet	0.0200	95.4	70-130	5.11	25		
p-Isopropyltoluene (p-Cymene)	0.0176	0.0020	mg/Kg wet	0.0200	88.2	70-130	2.91	25		
Methyl Acetate	0.0206	0.0020	mg/Kg wet	0.0200	103	70-130	0.965	25		



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QUALITY CONTROL**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B205838 - SW-846 5035										
LCS Dup (B205838-BSD1)										
Prepared & Analyzed: 06/15/18										
Methyl tert-Butyl Ether (MTBE)	0.0179	0.0040	mg/Kg wet	0.0200	89.4	70-130	4.48	25		
Methyl Cyclohexane	0.0179	0.0020	mg/Kg wet	0.0200	89.6	70-130	3.08	25		
Methylene Chloride	0.0181	0.020	mg/Kg wet	0.0200	90.3	40-160	1.10	25		†
4-Methyl-2-pentanone (MIBK)	0.212	0.020	mg/Kg wet	0.200	106	70-160	4.78	25		†
Naphthalene	0.0173	0.0040	mg/Kg wet	0.0200	86.7	40-130	8.29	25		†
n-Propylbenzene	0.0179	0.0020	mg/Kg wet	0.0200	89.7	70-130	0.777	25		
Styrene	0.0187	0.0020	mg/Kg wet	0.0200	93.4	70-130	0.107	25		
1,1,1,2-Tetrachloroethane	0.0189	0.0020	mg/Kg wet	0.0200	94.6	70-130	6.35	25		
1,1,2,2-Tetrachloroethane	0.0172	0.0010	mg/Kg wet	0.0200	85.9	70-130	9.85	25		
Tetrachloroethylene	0.0202	0.0020	mg/Kg wet	0.0200	101	70-130	3.02	25		
Tetrahydrofuran	0.0183	0.010	mg/Kg wet	0.0200	91.6	70-130	8.17	25		
Toluene	0.0178	0.0020	mg/Kg wet	0.0200	88.9	70-130	0.784	25		
1,2,3-Trichlorobenzene	0.0203	0.0020	mg/Kg wet	0.0200	101	70-130	1.18	25		
1,2,4-Trichlorobenzene	0.0197	0.0020	mg/Kg wet	0.0200	98.4	70-130	2.51	25		
1,3,5-Trichlorobenzene	0.0185	0.0020	mg/Kg wet	0.0200	92.5	70-130	7.79	25		
1,1,1-Trichloroethane	0.0165	0.0020	mg/Kg wet	0.0200	82.6	70-130	4.50	25		
1,1,2-Trichloroethane	0.0168	0.0020	mg/Kg wet	0.0200	84.1	70-130	8.65	25		
Trichloroethylene	0.0179	0.0020	mg/Kg wet	0.0200	89.5	70-130	1.12	25		
Trichlorofluoromethane (Freon 11)	0.0179	0.010	mg/Kg wet	0.0200	89.5	70-130	0.446	25		
1,2,3-Trichloropropane	0.0184	0.0020	mg/Kg wet	0.0200	92.2	70-130	3.20	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0199	0.010	mg/Kg wet	0.0200	99.3	70-130	1.52	25		
1,2,4-Trimethylbenzene	0.0173	0.0020	mg/Kg wet	0.0200	86.5	70-130	0.231	25		
1,3,5-Trimethylbenzene	0.0178	0.0020	mg/Kg wet	0.0200	89.1	70-130	2.00	25		
Vinyl Chloride	0.0177	0.010	mg/Kg wet	0.0200	88.5	40-130	0.680	25		†
m+p Xylene	0.0362	0.0040	mg/Kg wet	0.0400	90.4	70-130	1.50	25		
o-Xylene	0.0175	0.0020	mg/Kg wet	0.0200	87.4	70-130	0.457	25		
Surrogate: 1,2-Dichloroethane-d4	0.0482		mg/Kg wet	0.0500	96.4	70-130				
Surrogate: Toluene-d8	0.0505		mg/Kg wet	0.0500	101	70-130				
Surrogate: 4-Bromofluorobenzene	0.0510		mg/Kg wet	0.0500	102	70-130				



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QUALITY CONTROL**Semivolatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B205699 - SW-846 3510C										
Blank (B205699-BLK1)										
Prepared: 06/14/18 Analyzed: 06/18/18										
Acenaphthene (SIM)	ND	0.30	µg/L							
Acenaphthylene (SIM)	ND	0.30	µg/L							
Anthracene (SIM)	ND	0.20	µg/L							
Benzo(a)anthracene (SIM)	ND	0.050	µg/L							
Benzo(a)pyrene (SIM)	ND	0.10	µg/L							
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L							
Benzo(g,h,i)perylene (SIM)	ND	0.50	µg/L							
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L							
Chrysene (SIM)	ND	0.20	µg/L							
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L							
Fluoranthene (SIM)	ND	0.50	µg/L							
Fluorene (SIM)	ND	1.0	µg/L							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L							
2-Methylnaphthalene (SIM)	ND	1.0	µg/L							
Naphthalene (SIM)	ND	1.0	µg/L							
Phenanthrene (SIM)	ND	0.050	µg/L							
Pyrene (SIM)	ND	1.0	µg/L							
Surrogate: Nitrobenzene-d5	107		µg/L	100		107	30-130			
Surrogate: 2-Fluorobiphenyl	98.7		µg/L	100		98.7	30-130			
Surrogate: p-Terphenyl-d14	101		µg/L	100		101	30-130			
LCS (B205699-BS1)										
Prepared: 06/14/18 Analyzed: 06/18/18										
Acenaphthene (SIM)	44.0	7.5	µg/L	50.0		88.0	40-140			
Acenaphthylene (SIM)	46.3	7.5	µg/L	50.0		92.6	40-140			
Anthracene (SIM)	46.5	5.0	µg/L	50.0		93.0	40-140			
Benzo(a)anthracene (SIM)	45.5	1.2	µg/L	50.0		91.0	40-140			
Benzo(a)pyrene (SIM)	49.0	2.5	µg/L	50.0		98.0	40-140			
Benzo(b)fluoranthene (SIM)	50.5	1.2	µg/L	50.0		101	40-140			
Benzo(g,h,i)perylene (SIM)	49.8	12	µg/L	50.0		99.6	40-140			
Benzo(k)fluoranthene (SIM)	47.0	5.0	µg/L	50.0		93.9	40-140			
Chrysene (SIM)	43.8	5.0	µg/L	50.0		87.7	40-140			
Dibenz(a,h)anthracene (SIM)	53.2	5.0	µg/L	50.0		106	40-140			
Fluoranthene (SIM)	43.5	12	µg/L	50.0		87.0	40-140			
Fluorene (SIM)	45.4	25	µg/L	50.0		90.8	40-140			
Indeno(1,2,3-cd)pyrene (SIM)	54.0	5.0	µg/L	50.0		108	40-140			
2-Methylnaphthalene (SIM)	44.6	25	µg/L	50.0		89.2	40-140			
Naphthalene (SIM)	41.0	25	µg/L	50.0		82.1	40-140			
Phenanthrene (SIM)	44.8	1.2	µg/L	50.0		89.5	40-140			
Pyrene (SIM)	42.5	25	µg/L	50.0		85.0	40-140			
Surrogate: Nitrobenzene-d5	90.7		µg/L	100		90.7	30-130			
Surrogate: 2-Fluorobiphenyl	75.6		µg/L	100		75.6	30-130			
Surrogate: p-Terphenyl-d14	68.6		µg/L	100		68.6	30-130			



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QUALITY CONTROL**Semivolatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B205699 - SW-846 3510C

LCS Dup (B205699-BSD1)	Prepared: 06/14/18 Analyzed: 06/18/18								
Acenaphthene (SIM)	44.1	7.5	µg/L	50.0	88.2	40-140	0.227	20	
Acenaphthylene (SIM)	46.2	7.5	µg/L	50.0	92.4	40-140	0.270	20	
Anthracene (SIM)	46.0	5.0	µg/L	50.0	92.1	40-140	0.919	20	
Benzo(a)anthracene (SIM)	44.8	1.2	µg/L	50.0	89.6	40-140	1.44	20	
Benzo(a)pyrene (SIM)	48.1	2.5	µg/L	50.0	96.2	40-140	1.96	20	
Benzo(b)fluoranthene (SIM)	49.8	1.2	µg/L	50.0	99.6	40-140	1.30	20	
Benzo(g,h,i)perylene (SIM)	48.2	12	µg/L	50.0	96.3	40-140	3.32	20	
Benzo(k)fluoranthene (SIM)	46.3	5.0	µg/L	50.0	92.6	40-140	1.45	20	
Chrysene (SIM)	43.1	5.0	µg/L	50.0	86.2	40-140	1.67	20	
Dibenz(a,h)anthracene (SIM)	51.9	5.0	µg/L	50.0	104	40-140	2.62	20	
Fluoranthene (SIM)	43.3	12	µg/L	50.0	86.6	40-140	0.403	20	
Fluorene (SIM)	45.5	25	µg/L	50.0	91.0	40-140	0.220	20	
Indeno(1,2,3-cd)pyrene (SIM)	52.4	5.0	µg/L	50.0	105	40-140	3.10	20	‡
2-Methylnaphthalene (SIM)	44.4	25	µg/L	50.0	88.9	40-140	0.337	20	
Naphthalene (SIM)	41.0	25	µg/L	50.0	82.0	40-140	0.0609	20	
Phenanthrene (SIM)	44.4	1.2	µg/L	50.0	88.8	40-140	0.729	20	
Pyrene (SIM)	41.4	25	µg/L	50.0	82.7	40-140	2.68	20	
Surrogate: Nitrobenzene-d5	90.2		µg/L	100	90.2	30-130			
Surrogate: 2-Fluorobiphenyl	76.0		µg/L	100	76.0	30-130			
Surrogate: p-Terphenyl-d14	67.9		µg/L	100	67.9	30-130			

Batch B205818 - SW-846 3546

Blank (B205818-BLK1)	Prepared: 06/15/18 Analyzed: 06/18/18					
Acenaphthene	ND	0.17	mg/Kg wet			
Acenaphthylene	ND	0.17	mg/Kg wet			
Anthracene	ND	0.17	mg/Kg wet			
Benzo(a)anthracene	ND	0.17	mg/Kg wet			
Benzo(a)pyrene	ND	0.17	mg/Kg wet			
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet			
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet			
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet			
Chrysene	ND	0.17	mg/Kg wet			
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet			
Fluoranthene	ND	0.17	mg/Kg wet			
Fluorene	ND	0.17	mg/Kg wet			
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet			
2-Methylnaphthalene	ND	0.17	mg/Kg wet			
Naphthalene	ND	0.17	mg/Kg wet			
Phenanthrene	ND	0.17	mg/Kg wet			
Pyrene	ND	0.17	mg/Kg wet			
Surrogate: Nitrobenzene-d5	2.30		mg/Kg wet	3.33	69.0	30-130
Surrogate: 2-Fluorobiphenyl	2.13		mg/Kg wet	3.33	64.0	30-130
Surrogate: p-Terphenyl-d14	2.76		mg/Kg wet	3.33	82.8	30-130



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QUALITY CONTROL**Semivolatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B205818 - SW-846 3546										
LCS (B205818-BS1)										
Prepared: 06/15/18 Analyzed: 06/18/18										
Acenaphthene	0.904	0.17	mg/Kg wet	1.67	54.2	40-140				
Acenaphthylene	0.941	0.17	mg/Kg wet	1.67	56.5	40-140				
Anthracene	1.04	0.17	mg/Kg wet	1.67	62.2	40-140				
Benzo(a)anthracene	1.00	0.17	mg/Kg wet	1.67	60.2	40-140				
Benzo(a)pyrene	1.03	0.17	mg/Kg wet	1.67	61.9	40-140				
Benzo(b)fluoranthene	0.991	0.17	mg/Kg wet	1.67	59.5	40-140				
Benzo(g,h,i)perylene	1.04	0.17	mg/Kg wet	1.67	62.4	40-140				
Benzo(k)fluoranthene	1.01	0.17	mg/Kg wet	1.67	60.9	40-140				
Chrysene	0.951	0.17	mg/Kg wet	1.67	57.1	40-140				
Dibenz(a,h)anthracene	1.02	0.17	mg/Kg wet	1.67	60.9	40-140				
Fluoranthene	1.05	0.17	mg/Kg wet	1.67	63.2	40-140				
Fluorene	0.991	0.17	mg/Kg wet	1.67	59.5	40-140				
Indeno(1,2,3-cd)pyrene	1.04	0.17	mg/Kg wet	1.67	62.2	40-140				
2-Methylnaphthalene	1.03	0.17	mg/Kg wet	1.67	61.9	40-140				
Naphthalene	0.941	0.17	mg/Kg wet	1.67	56.5	40-140				
Phenanthrene	1.03	0.17	mg/Kg wet	1.67	62.0	40-140				
Pyrene	1.00	0.17	mg/Kg wet	1.67	60.0	40-140				
Surrogate: Nitrobenzene-d5	1.98		mg/Kg wet	3.33	59.3	30-130				
Surrogate: 2-Fluorobiphenyl	1.81		mg/Kg wet	3.33	54.3	30-130				
Surrogate: p-Terphenyl-d14	2.21		mg/Kg wet	3.33	66.2	30-130				
LCS Dup (B205818-BSD1)										
Prepared: 06/15/18 Analyzed: 06/18/18										
Acenaphthene	0.934	0.17	mg/Kg wet	1.67	56.0	40-140	3.26	30		
Acenaphthylene	0.981	0.17	mg/Kg wet	1.67	58.9	40-140	4.20	30		
Anthracene	1.14	0.17	mg/Kg wet	1.67	68.3	40-140	9.41	30		
Benzo(a)anthracene	1.12	0.17	mg/Kg wet	1.67	67.2	40-140	10.9	30		
Benzo(a)pyrene	1.15	0.17	mg/Kg wet	1.67	69.3	40-140	11.2	30		
Benzo(b)fluoranthene	1.10	0.17	mg/Kg wet	1.67	66.1	40-140	10.5	30		
Benzo(g,h,i)perylene	1.16	0.17	mg/Kg wet	1.67	69.4	40-140	10.7	30		
Benzo(k)fluoranthene	1.12	0.17	mg/Kg wet	1.67	67.3	40-140	10.0	30		
Chrysene	1.06	0.17	mg/Kg wet	1.67	63.4	40-140	10.5	30		
Dibenz(a,h)anthracene	1.13	0.17	mg/Kg wet	1.67	67.6	40-140	10.5	30		
Fluoranthene	1.16	0.17	mg/Kg wet	1.67	69.9	40-140	10.0	30		
Fluorene	1.06	0.17	mg/Kg wet	1.67	63.5	40-140	6.51	30		
Indeno(1,2,3-cd)pyrene	1.15	0.17	mg/Kg wet	1.67	68.9	40-140	10.1	30		
2-Methylnaphthalene	1.01	0.17	mg/Kg wet	1.67	60.9	40-140	1.73	30		
Naphthalene	0.902	0.17	mg/Kg wet	1.67	54.1	40-140	4.27	30		
Phenanthrene	1.13	0.17	mg/Kg wet	1.67	68.0	40-140	9.29	30		
Pyrene	1.12	0.17	mg/Kg wet	1.67	67.4	40-140	11.6	30		
Surrogate: Nitrobenzene-d5	1.85		mg/Kg wet	3.33	55.6	30-130				
Surrogate: 2-Fluorobiphenyl	1.79		mg/Kg wet	3.33	53.8	30-130				
Surrogate: p-Terphenyl-d14	2.41		mg/Kg wet	3.33	72.2	30-130				



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QUALITY CONTROL**Petroleum Hydrocarbons Analyses - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B205702 - SW-846 3510C

Blank (B205702-BLK1)	Prepared: 06/14/18 Analyzed: 06/16/18						
Diesel Range Organics	ND	0.20	mg/L				
Surrogate: 2-Fluorobiphenyl	0.0689		mg/L	0.100	68.9	40-140	
LCS (B205702-BS1)	Prepared: 06/14/18 Analyzed: 06/16/18						
Diesel Range Organics	0.580	0.20	mg/L	1.00	58.0	40-140	
Surrogate: 2-Fluorobiphenyl	0.0664		mg/L	0.100	66.4	40-140	
LCS Dup (B205702-BSD1)	Prepared: 06/14/18 Analyzed: 06/16/18						
Diesel Range Organics	0.624	0.20	mg/L	1.00	62.4	40-140	7.38
Surrogate: 2-Fluorobiphenyl	0.0723		mg/L	0.100	72.3	40-140	

Batch B205817 - SW-846 3546

Blank (B205817-BLK1)	Prepared: 06/15/18 Analyzed: 06/18/18							
Diesel Range Organics	ND	8.3	mg/Kg wet					
Surrogate: 2-Fluorobiphenyl	2.43		mg/Kg wet	3.33	72.8	40-140		
LCS (B205817-BS1)	Prepared: 06/15/18 Analyzed: 06/18/18							
Diesel Range Organics	25.5	8.3	mg/Kg wet	33.3	76.6	40-140		
Surrogate: 2-Fluorobiphenyl	2.98		mg/Kg wet	3.33	89.3	40-140		
LCS Dup (B205817-BSD1)	Prepared: 06/15/18 Analyzed: 06/18/18							
Diesel Range Organics	27.3	8.3	mg/Kg wet	33.3	81.9	40-140	6.67	
Surrogate: 2-Fluorobiphenyl	3.07		mg/Kg wet	3.33	92.2	40-140		
Matrix Spike (B205817-MS1)	Source: 18F0602-01			Prepared: 06/15/18 Analyzed: 06/18/18				
Diesel Range Organics	33.1	9.6	mg/Kg dry	38.4	6.66	68.9	40-140	
Surrogate: 2-Fluorobiphenyl	3.28		mg/Kg dry	3.84		85.3	40-140	
Matrix Spike Dup (B205817-MSD1)	Source: 18F0602-01			Prepared: 06/15/18 Analyzed: 06/18/18				
Diesel Range Organics	34.6	9.6	mg/Kg dry	38.4	6.66	72.6	40-140	4.20
Surrogate: 2-Fluorobiphenyl	3.51		mg/Kg dry	3.84		91.3	40-140	30

Batch B205831 - SW-846 5035/5030B

Blank (B205831-BLK1)	Prepared & Analyzed: 06/15/18						
Gasoline Range Organics (GRO)	ND	0.010	mg/Kg wet				
Surrogate: 1-Chloro-3-fluorobenzene	17.8		µg/L	15.0	119	70-130	
LCS (B205831-BS1)	Prepared & Analyzed: 06/15/18						
Gasoline Range Organics (GRO)	0.244	0.010	mg/Kg wet	0.250	97.5	80-120	
Surrogate: 1-Chloro-3-fluorobenzene	18.7		µg/L	15.0	125	70-130	



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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B205831 - SW-846 5035/5030B

LCS Dup (B205831-BSD1)							Prepared & Analyzed: 06/15/18			
Gasoline Range Organics (GRO)	0.275	0.010	mg/Kg wet	0.250		110	80-120	12.3	30	
Surrogate: 1-Chloro-3-fluorobenzene	18.4		µg/L	15.0		123	70-130			

Batch B205832 - SW-846 5035

Blank (B205832-BLK1)							Prepared & Analyzed: 06/15/18			
Gasoline Range Organics (GRO)	ND	0.010	mg/L							
Surrogate: 1-Chloro-3-fluorobenzene	17.8		µg/L	15.0		119	70-130			
LCS (B205832-BS1)										
Gasoline Range Organics (GRO)	0.244	0.010	mg/L	0.250		97.5	80-120			
Surrogate: 1-Chloro-3-fluorobenzene	18.7		µg/L	15.0		125	70-130			
LCS Dup (B205832-BSD1)							Prepared & Analyzed: 06/15/18			
Gasoline Range Organics (GRO)	0.275	0.010	mg/L	0.250		110	80-120	12.3	30	
Surrogate: 1-Chloro-3-fluorobenzene	18.4		µg/L	15.0		123	70-130			



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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
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Batch B205714 - % Solids

Duplicate (B205714-DUP1)	Source: 18F0602-01			Prepared: 06/14/18 Analyzed: 06/15/18				
% Solids	86.5		% Wt		86.8		0.285	20



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FLAG/QUALIFIER SUMMARY

* QC result is outside of established limits.

† Wide recovery limits established for difficult compound.

‡ Wide RPD limits established for difficult compound.

Data exceeded client recommended or regulatory level

ND Not Detected

RL Reporting Limit is at the level of quantitation (LOQ)

DL Detection Limit is the lower limit of detection determined by the MDL study

MCL Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

- | | |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L-02 | Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits.
Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side. |
| L-04 | Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits.
Reported value for this compound is likely to be biased on the low side. |
| V-05 | Continuing calibration did not meet method specifications and was biased on the low side for this compound.
Reported result is estimated. |
| V-20 | Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound. |
| V-34 | Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated. |
| V-35 | Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated. |
| Z-01 | Potential false positive result due to a non-GRO hydrocarbon peak within the C6-C10 gasoline range. |



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8015C in Soil</i>	
Gasoline Range Organics (GRO)	NY,VA,NH,NC
Diesel Range Organics	NY,VA,NH,NC
<i>SW-846 8015C in Water</i>	
Gasoline Range Organics (GRO)	NY,VA,NH,NC
Diesel Range Organics	NY,VA,NH,NC
<i>SW-846 8260C in Soil</i>	
Acetone	CT,NH,NY,ME,VA
Acrylonitrile	CT,NH,NY,ME,VA
Benzene	CT,NH,NY,ME,VA
Bromobenzene	NH,NY,ME,VA
Bromochloromethane	NH,NY,ME,VA
Bromodichloromethane	CT,NH,NY,ME,VA
Bromoform	CT,NH,NY,ME,VA
Bromomethane	CT,NH,NY,ME,VA
2-Butanone (MEK)	CT,NH,NY,ME,VA
tert-Butyl Alcohol (TBA)	NY
n-Butylbenzene	CT,NH,NY,ME,VA
sec-Butylbenzene	CT,NH,NY,ME,VA
tert-Butylbenzene	CT,NH,NY,ME,VA
Carbon Disulfide	CT,NH,NY,ME,VA
Carbon Tetrachloride	CT,NH,NY,ME,VA
Chlorobenzene	CT,NH,NY,ME,VA
Chlorodibromomethane	CT,NH,NY,ME,VA
Chloroethane	CT,NH,NY,ME,VA
Chloroform	CT,NH,NY,ME,VA
Chloromethane	CT,NH,NY,ME,VA
2-Chlorotoluene	CT,NH,NY,ME,VA
4-Chlorotoluene	CT,NH,NY,ME,VA
1,2-Dibromo-3-chloropropane (DBCP)	NY
Dibromomethane	NH,NY,ME,VA
1,2-Dichlorobenzene	CT,NH,NY,ME,VA
1,3-Dichlorobenzene	CT,NH,NY,ME,VA
1,4-Dichlorobenzene	CT,NH,NY,ME,VA
trans-1,4-Dichloro-2-butene	NY
Dichlorodifluoromethane (Freon 12)	NH,NY,ME,VA
1,1-Dichloroethane	CT,NH,NY,ME,VA
1,2-Dichloroethane	CT,NH,NY,ME,VA
1,1-Dichloroethylene	CT,NH,NY,ME,VA
cis-1,2-Dichloroethylene	CT,NH,NY,ME,VA
trans-1,2-Dichloroethylene	CT,NH,NY,ME,VA
1,2-Dichloropropane	CT,NH,NY,ME,VA
1,3-Dichloropropane	NH,NY,ME,VA
2,2-Dichloropropane	NH,NY,ME,VA
1,1-Dichloropropene	NH,NY,ME,VA
cis-1,3-Dichloropropene	CT,NH,NY,ME,VA
trans-1,3-Dichloropropene	CT,NH,NY,ME,VA



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C in Soil</i>	
1,4-Dioxane	NY
Ethylbenzene	CT,NH,NY,ME,VA
Hexachlorobutadiene	NH,NY,ME,VA
2-Hexanone (MBK)	CT,NH,NY,ME,VA
Isopropylbenzene (Cumene)	CT,NH,NY,ME,VA
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl Acetate	NY
Methyl tert-Butyl Ether (MTBE)	NY,VA
Methyl Cyclohexane	NY
Methylene Chloride	CT,NH,NY,ME,VA
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,VA
Naphthalene	NH,NY,ME,VA
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME,VA
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME,VA
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME,VA
Tetrachloroethylene	CT,NH,NY,ME,VA
Toluene	CT,NH,NY,ME,VA
1,2,3-Trichlorobenzene	NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME,VA
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,NH,NY,ME,VA
1,1,2-Trichloroethane	CT,NH,NY,ME,VA
Trichloroethylene	CT,NH,NY,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME,VA
1,2,3-Trichloropropane	NH,NY,ME,VA
1,2,4-Trimethylbenzene	CT,NH,NY,ME,VA
1,3,5-Trimethylbenzene	CT,NH,NY,ME,VA
Vinyl Chloride	CT,NH,NY,ME,VA
m+p Xylene	CT,NH,NY,ME,VA
o-Xylene	CT,NH,NY,ME,VA
<i>SW-846 8260C in Water</i>	
Acetone	CT,ME,NH,VA,NY
Acrylonitrile	CT,ME,NH,VA,NY
tert-Amyl Methyl Ether (TAME)	ME,NH,VA,NY
Benzene	CT,ME,NH,VA,NY
Bromobenzene	NY
Bromoform	ME,NH,VA,NY
Bromochloromethane	CT,ME,NH,VA,NY
Bromodichloromethane	CT,ME,NH,VA,NY
Bromoform	CT,ME,NH,VA,NY
Bromomethane	CT,ME,NH,VA,NY
2-Butanone (MEK)	CT,ME,NH,VA,NY
tert-Butyl Alcohol (TBA)	ME,NH,VA,NY
n-Butylbenzene	ME,VA,NY
sec-Butylbenzene	ME,VA,NY
tert-Butylbenzene	ME,VA,NY



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C in Water</i>	
tert-Butyl Ethyl Ether (TBEE)	ME,NH,VA,NY
Carbon Disulfide	CT,ME,NH,VA,NY
Carbon Tetrachloride	CT,ME,NH,VA,NY
Chlorobenzene	CT,ME,NH,VA,NY
Chlorodibromomethane	CT,ME,NH,VA,NY
Chloroethane	CT,ME,NH,VA,NY
Chloroform	CT,ME,NH,VA,NY
Chloromethane	CT,ME,NH,VA,NY
2-Chlorotoluene	ME,NH,VA,NY
4-Chlorotoluene	ME,NH,VA,NY
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NY
Dibromomethane	ME,NH,VA,NY
1,2-Dichlorobenzene	CT,ME,NH,VA,NY
1,3-Dichlorobenzene	CT,ME,NH,VA,NY
1,4-Dichlorobenzene	CT,ME,NH,VA,NY
trans-1,4-Dichloro-2-butene	ME,NH,VA,NY
Dichlorodifluoromethane (Freon 12)	ME,NH,VA,NY
1,1-Dichloroethane	CT,ME,NH,VA,NY
1,2-Dichloroethane	CT,ME,NH,VA,NY
1,1-Dichloroethylene	CT,ME,NH,VA,NY
cis-1,2-Dichloroethylene	ME,NY
trans-1,2-Dichloroethylene	CT,ME,NH,VA,NY
1,2-Dichloropropane	CT,ME,NH,VA,NY
1,3-Dichloropropane	ME,VA,NY
2,2-Dichloropropane	ME,NH,VA,NY
1,1-Dichloropropene	ME,NH,VA,NY
cis-1,3-Dichloropropene	CT,ME,NH,VA,NY
trans-1,3-Dichloropropene	CT,ME,NH,VA,NY
Diethyl Ether	NY
Diisopropyl Ether (DIPE)	ME,NH,VA,NY
1,4-Dioxane	NY
Ethylbenzene	CT,ME,NH,VA,NY
Hexachlorobutadiene	CT,ME,NH,VA,NY
2-Hexanone (MBK)	CT,ME,NH,VA,NY
Isopropylbenzene (Cumene)	ME,VA,NY
p-Isopropyltoluene (p-Cymene)	CT,ME,NH,VA,NY
Methyl Acetate	NY
Methyl tert-Butyl Ether (MTBE)	CT,ME,NH,VA,NY
Methyl Cyclohexane	NY
Methylene Chloride	CT,ME,NH,VA,NY
4-Methyl-2-pentanone (MIBK)	CT,ME,NH,VA,NY
Naphthalene	ME,NH,VA,NY
n-Propylbenzene	CT,ME,NH,VA,NY
Styrene	CT,ME,NH,VA,NY
1,1,1,2-Tetrachloroethane	CT,ME,NH,VA,NY
1,1,2,2-Tetrachloroethane	CT,ME,NH,VA,NY



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C in Water</i>	
Tetrachloroethylene	CT,ME,NH,VA,NY
Toluene	CT,ME,NH,VA,NY
1,2,3-Trichlorobenzene	ME,NH,VA,NY
1,2,4-Trichlorobenzene	CT,ME,NH,VA,NY
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,ME,NH,VA,NY
1,1,2-Trichloroethane	CT,ME,NH,VA,NY
Trichloroethylene	CT,ME,NH,VA,NY
Trichlorofluoromethane (Freon 11)	CT,ME,NH,VA,NY
1,2,3-Trichloropropane	ME,NH,VA,NY
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	VA,NY
1,2,4-Trimethylbenzene	ME,VA,NY
1,3,5-Trimethylbenzene	ME,VA,NY
Vinyl Chloride	CT,ME,NH,VA,NY
m+p Xylene	CT,ME,NH,VA,NY
o-Xylene	CT,ME,NH,VA,NY
<i>SW-846 8270D in Soil</i>	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA



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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2019
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2019
RI	Rhode Island Department of Health	LAO00112	12/30/2018
NC	North Carolina Div. of Water Quality	652	12/31/2018
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2018
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2018
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2018



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Frostling & Robertson

3015 Dumbarton Road

Richmond, VA

804-224-2231

Railroad Club

Project Location: 2908 9 Street

Richmond, VA

Project Number: 54V-0288

Project Manager: Stephanie Golembeski

Con-Test Quote Name/Number: 54V0288-00002

Invoice Recipient: Stephan & Golembeski

Sampled By: Brian Delibes/Megan Olsaner

Con-Test Work Order#

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Composite

Grab

Matrix Code

Code

GW

GV

GN

AV

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

Requested Turnaround Time		ANALYSIS REQUESTED	
7-Day	<input checked="" type="checkbox"/> 10-Day	<input type="checkbox"/>	
Due Date:	5/24		
Rush Approval Required			
1-Day	<input type="checkbox"/>	3-Day	<input type="checkbox"/>
2-Day	<input type="checkbox"/>	4-Day	<input type="checkbox"/>
By Mail or Email			
Format:	PDF <input checked="" type="checkbox"/>	EXCEL <input type="checkbox"/>	
Other:			
CLP Like Data Pkg Required: <input type="checkbox"/>			
Email To:			
Fax To #:			

Dissolved Metals Samples	
<input type="checkbox"/> Field Filtered	<input type="checkbox"/> Lab to Filter
<input type="checkbox"/> Field Filtered	<input type="checkbox"/> Lab to Filter
<input type="checkbox"/> Other	

Organic Solvent Samples	
<input type="checkbox"/> Field Filtered	<input type="checkbox"/> Lab to Filter
<input type="checkbox"/> Other	
<input type="checkbox"/> Other	

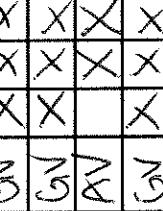
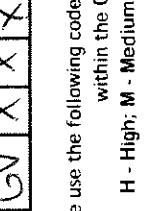
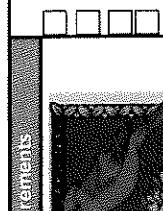
PCB ONLY	
<input type="checkbox"/> Soxhlet	<input type="checkbox"/> Non Soxhlet
<input type="checkbox"/> Other	

U/I/AM OF CUSTODY RECORD (North Carolina)

Doc # 379 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Table of Contents

Comments:		For Pricing USE Bid		Please use the following codes to indicate possible sample concentration within the Conc Code column above:	
		H - High; M - Medium; L - Low; C - Clean; U - Unknown			
Relinquished by: (signature)		Date/Time:	DSCA	UST / Trust Fund	
Received by: (signature)		Date/Time:	SWS Landfill	REC	
Inquired by: (signature)		Date/Time:	IHSB Orphaned Landfill		
Received by: (signature)		Date/Time:	State Lead		
			Other:		

Program Information	
<input type="checkbox"/> DSCA	<input type="checkbox"/> REC
<input type="checkbox"/> SWS Landfill	
<input type="checkbox"/> IHSB Orphaned Landfill	
<input type="checkbox"/> State Lead	
<input type="checkbox"/> Other:	

Project Entity		Other		Other	
<input type="checkbox"/> Government	<input type="checkbox"/> Municipality	<input type="checkbox"/> Chromatogram	<input type="checkbox"/> PCB ONLY	<input type="checkbox"/> Soxhlet	<input type="checkbox"/> Non Soxhlet
<input type="checkbox"/> Federal	<input type="checkbox"/> Brownfield	<input type="checkbox"/> AIIHA-LAP, LLC			
<input type="checkbox"/> City	<input type="checkbox"/> School				



FedEx® Tracking

411359781387

Ship date:

Tue 6/12/2018

Richmond, VA US

Actual delivery:

Wed 6/13/2018 10:12 am

Delivered

Signed for by: B BECCA

EAST LONGMEADOW, MA US



Returns

Travel History

Date/Time	Activity	Location
6/13/2018 - Wednesday		
10:12 am	Delivered	East Longmeadow, MA
8:06 am	On FedEx vehicle for delivery	WINDSOR LOCKS, CT
7:54 am	At local FedEx facility	WINDSOR LOCKS, CT
6:08 am	At destination sort facility	EAST GRANBY, CT
4:31 am	Departed FedEx location	INDIANAPOLIS, IN
12:29 am	Arrived at FedEx location	INDIANAPOLIS, IN
6/12/2018 - Tuesday		
8:01 pm	Left FedEx origin facility	MECHANICSVILLE, VA
3:55 pm	Picked up	MECHANICSVILLE, VA
6/06/2018 - Wednesday		
8:27 am	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	411359781387	Service	FedEx Priority Overnight
Weight	15 lbs / 6.8 kgs	Dimensions	24x14x14 in.
Delivered To	Shipping/Receiving	Total pieces	1
Total shipment weight	15 lbs / 6.8 kgs	Return reason	
Terms	Third Party	Packaging	Your Packaging
Special handling section	Deliver Weekday	Standard transit	6/13/2018 by 10:30 am

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Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False

Statement will be brought to the attention of the Client - State True or False

Client Frehling ? RobertsonReceived By J MPDate 6/13/18Time 10:12

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # F Actual Temp - 38.5°0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all Client Analysis T Sampler Name T
 pertinent Information? Project ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? f

Proper Media/Containers Used? T Is splitting samples required? f

Were trip blanks received? F On COC? f

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	<u>9</u>	1 Liter Plastic		16 oz Amb.
HCL-	<u>18</u>	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-	<u>14</u>	250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-	<u>14</u>	Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear
DI-		Other Plastic		Other Glass		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Comments:



Soil Boring Logs



Project No.	54V-0288			Date:	June 11, 2018	
Project	City of Richmond- 2908 P Street Richmond, VA					
Boring No.	SB-01	Total Depth:	30	Elev:	Existing Ground Surface	Location: See Boring Location Plan
Type of Boring:	Geoprobe	Started:	6/11/2018	Completed:	6/11/2018	Driller: JETCO
<hr/>						
Depth (ft.)	Description of Materials			PID Reading (ppm)	Remarks	
0-5	Yellowish-orange dry-moist silty clay			0.2		
5-10	Yellowish-orange dry-moist silty clay			0		
10-15	Yellowish-orange dry silty clay			0		
15-20	Yellowish-orange dry sand with some clay			0.4		
20-25	Yellowish-orange moist-wet clay to sand			0.7	SB-01 submitted for analysis (23-24)	
25-30	Yellowish-orange moist-wet sandy clay			0.8		

Groundwater encountered at 24'. GW-01 submitted for analysis.



Project No.	54V-0288			Date:	June 11, 2018	
Project	City of Richmond- 2908 P Street Richmond, VA					
Boring No.	SB-02	Total Depth:	25	Elev:	Existing Ground Surface	Location: See Boring Location Plan
Type of Boring:	Geoprobe	Started:	6/11/2018	Completed:	6/11/2018	Driller: JETCO
<hr/>						
Depth (ft.)	Description of Materials			PID Reading (ppm)	Remarks	
0-5	Yellowish-orange dry-moist silty clay			0.2	SB-02 submitted for analysis (2-3)	
5-10	Yellowish-orange dry silty clay			0.1		
10-15	Yellowish-orange dry sandy clay			0.1		



Project No.	54V-0288			Date:	June 11, 2018	
Project	City of Richmond- 2908 P Street Richmond, VA					
Boring No.	SB-03	Total Depth:	20	Elev:	Existing Ground Surface	Location: See Boring Location Plan
Type of Boring:	Geoprobe	Started:	6/11/2018	Completed:	6/11/2018	Driller: JETCO
0-5	Yellowish-orange/light gray moist sandy clay			0.1		
5-10	Yellowish-orange/light gray moist sandy clay			0.2		
10-15	Yellowish-orange/light gray dry-wet sandy clay			0.7	SB-03 submitted for analysis (14-15)	



Project No.	54V-0288			Date:	June 11, 2018	
Project	City of Richmond- 2908 P Street Richmond, VA					
Boring No.	SB-04	Total Depth:	4	Elev:	Existing Ground Surface	Location: See Boring Location Plan
Type of Boring:	Geoprobe	Started:	6/11/2018	Completed:	6/11/2018	Driller: JETCO
Depth (ft.)	Description of Materials			PID Reading (ppm)	Remarks	
0-4	Light brown moist sand and clay			0.2	SB-04 submitted for analysis (3-4)	



Project No.	54V-0288			Date:	June 11, 2018	
Project	City of Richmond- 2908 P Street Richmond, VA					
Boring No.	SB-05	Total Depth:	30	Elev:	Existing Ground Surface	Location: See Boring Location Plan
Type of Boring:	Geoprobe	Started:	6/11/2018	Completed:	6/11/2018	Driller: JETCO
<hr/>						
Depth (ft.)	Description of Materials			PID Reading (ppm)	Remarks	
0-5	Yellowish-orange moist silty clay			0.4		
5-10	Yellowish-orange moist-dry silty clay			0.4		
10-15	Yellowish-orange dry silty clay			0		



Project No.	54V-0288			Date:	June 11, 2018	
Project	City of Richmond- 2908 P Street Richmond, VA					
Boring No.	SB-06	Total Depth:	35	Elev:	Existing Ground Surface	Location: See Boring Location Plan
Type of Boring:	Geoprobe	Started:	6/11/2018	Completed:	6/11/2018	Driller: JETCO
<hr/>						
Depth (ft.)	Description of Materials			PID Reading (ppm)	Remarks	
0-5	Yellowish-orange moist silty clay			0.9		
5-10	Light brown dry silty clay			0.2		
10-15	Yellowish-orange dry silty clay			0.3		